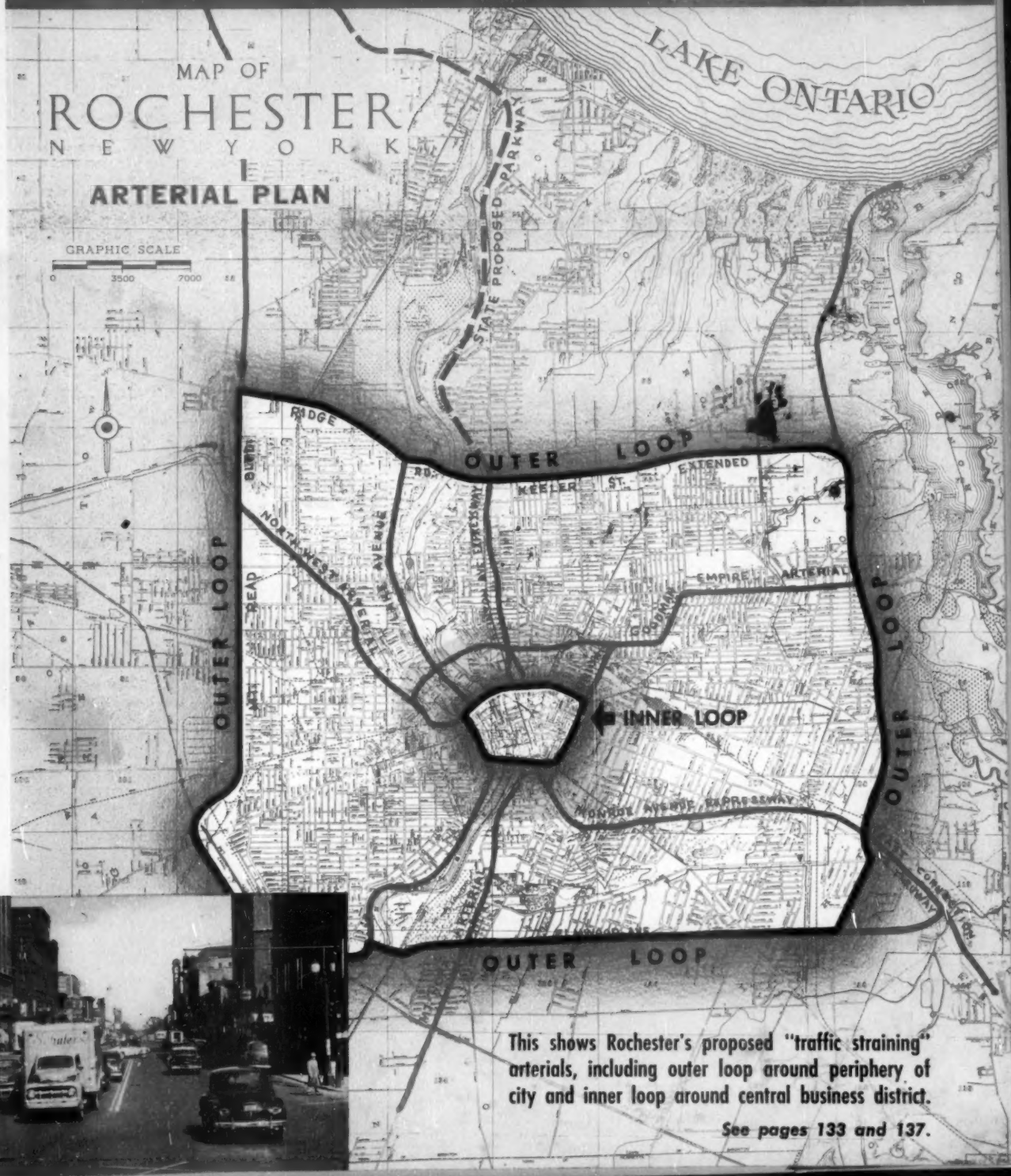
The American City

APRIL 1954



This shows Rochester's proposed "traffic straining" arterials, including outer loop around periphery of city and inner loop around central business district.

See pages 133 and 137.

The Delaware River Bridge at Philadelphia, principal link between Pennsylvania and New Jersey. Served by heavy-duty Texaco Asphaltic Concrete and Texaco Sheet Asphalt paving, constructed by the Union Paving Company of Philadelphia.

81,000 vehicles a day

cross Delaware River Bridge on resilient Texaco Asphalt paving

Motor vehicle traffic on the Delaware River Bridge at Philadelphia set a new high last year . . . 29,599,000 cars, trucks and buses . . . a daily average of 81,000 vehicles. This bridge ranks among the nation's busiest traffic arteries.

It is noteworthy that this exceptionally heavy traffic is served exclusively by resilient, heavy-duty Texaco asphalt paving. Two types of construction were used, hot-mix Asphaltic Concrete and Sheet Asphalt.

Their performance under Delaware River Bridge traffic is convincing proof of the rugged durability of Texaco Asphaltic Concrete and Texaco Sheet Asphalt. A considerable portion of this paving has been in service for the past 9 years. The rest has been withstanding this punishing impact since 1949. In spite of the unusually severe traffic conditions to which it has been subjected, this bridge pavement has required negligible maintenance to date.

Turnpike officials, particularly, will be interested in such examples as this of Asphalt's rugged durability under the heaviest kind of traffic. Add to this proof of performance the substantial savings afforded by Asphalt paving's lower first cost and its lower annual cost.

Two helpful booklets which describe Asphaltic Concrete, Sheet Asphalt and the various other types of Asphalt road and street construction may be secured without obligation by writing our nearest office.

THE TEXAS COMPANY, Asphalt Sales Dept., 135 E. 42nd Street, New York City 17

Boston 16 Chicago 4 Denver 1 Houston 1 Jacksonville 2 Minneapolis 3 Philadelphia 2 Richmond 19

TEXACO

REG. T. M.

TEXACO ASPHALT

APRIL 1954

The American City

Administration and Government

Our Municipal Notebook **5**
East Hartford Enacts Nine O'clock Curfew **93**
Secaucus Tax Bills **95**
Boom Town Bills Faster **96**
The City Tells Its Story **98**
The First 12 Hours **109**
Connecticut Annual Award Winners Announced **111**
Battlegrounds of Governments in Pennsylvania **115**
How a Woman Member of City Council Sees Her Job **119**
The Walrus and the Cited Cities **151**
Lynwood Dedicates Modern City Hall **153**
Recent City Manager Appointments **167**

Street Construction and Maintenance And Street Cleaning

Results of Asphalt-Surface Tests **25**
From Clearing Snow to Loading Slag **125**
Traffic Relief for Lancaster **25**
300 Per Cent Bigger Pay Load **27**
City-Owned Rock Crushers Are Money Savers **88**
An Asphalt Plant for a Small City **110**

Lighting

Penta Poles Carry Mercury Luminaires **143**
A Touch of Distinction **145**
Merchants and City Share Costs **145**
All Westlake, Ohio, Paid for Lighted Sports Field **149**
New Lights and Old **149**

Sewerage and Sewage Treatment

Enzymes Beat Seasonal Overloads **17**
For Vacationers' Pleasure **17**
Economies in Sewage Treatment Construction **83**
Sewage Can Make a River More Attractive **90**
A Way to Locate Leaks in Sewers **107**

Power

A Switch to Natural Gas **85**

Parks and Recreation

Diving Boards **19**
Gifts to Central Park **94**
Chicago Park District Music Programs **131**
Citizens to Have Say in Tree Removals **131**

Public Safety

Fire-Alarm Box "Talked" in Pasadena **21**
Has Your Town an Outboard Motor Rescue Boat? **21**
Special School Traffic Police Sworn In **21**
Phoenix Buys a Pumping Engine **21**
Standards for Gasoline Truck Deliveries **151**
Civil Defense Gains in New York City **158**

Water Supply and Treatment

A Way Out of a Water Shortage **23**
Everybody Needs More Water **23**
Rebuild Water Filters With Care **86**
Coagulation Had to Come **100**
A Soil-Cement Lake Bottom **104**
Get Ready for Fluoridation **120**
The Toledo Story of Corrosion Prevention **124**

Traffic Control

Summit Plan Grapples with Parking Problems **114**
What Downtown's Got That Suburban Centers Haven't **131**
Rochester's Traffic Strainer **133**
Chicago Parking Areas Outside Business District **133**
Status of Red Stop Traffic Signs **135**
Traffic Violators Get 2nd Chance in Livonia **135**
Parking Within Rochester's Business District **137**
Airtubes Speed Parking Turnover **138**
By Their Accidents Ye Shall Know Them **138**
Rent the Air Above Parking Lots **159**

Purchasing

Preference to Local Bidders — When and Why **127**
Purchasing News **185**

Planning, Zoning, and Housing

Single-Family Housing Tried in Public Projects **97**
Tri-County Plan Association Aids Growing Townships **101**
Close-In Blighted Areas **102**
Principles for Metropolitan Regions **106**
New Orleans Begins Job of Housing Rehabilitation **112**
"Practical" Cities Must Not Be Full of Irritations **122**
Zoning of Household Pets Poses Questions **158**
Zoning and Planning Notes **163**

Local Spending Policies and Public Works Timing

Cities Tell Public Improvement Plans **5**
Local Spending Policies **9**
Advance Planning and Timing of Local Public Works **108**
Cities Make Redevelopment Progress **129**

Refuse Collection and Disposal

300 Per Cent Bigger Pay Load **27**
The Area Method of Landfill — Sanitary Fill Series **116**
Hydroflation for Good Tractor-Tire Performance **118**

Air Pollution

Schools Cut Air Pollution **92**

Departments

Manufacturers' Catalogs **29**
Legal Notes and Decisions **165**
Bond Market **167**
Conventions — When and Where **171**
Municipal and Civic Publications **173**
Purchasing News **185**
About People You Know **232, 233**
Index to Advertisers **244, 245**

Long Distance Rates Are Low. These are the *daytime* station-to-station rates for the first three minutes and do not include federal excise tax. Long Distance rates are even lower after six every evening and all day Sunday.

You save days and dollars when you go **Long Distance**

There is hardly any limit to the time, money and waste motion Long Distance telephone service can save in a single business day.

Here are only a few of many things you can do by telephone: Make appointments to avoid fruitless visits. Complete sales with new contacts or old customers. Make purchases at advantageous prices or when emergencies arise. Satisfy complaints promptly and personally. Make collections by diplomatic, friendly discussions of overdue accounts.

Many companies have found that a small investment in Long Distance pays big dividends.

Long Distance Doesn't Cost—It Pays. We have some specific suggestions for the profitable use of Long Distance in Sales, Purchasing, Administration, Traffic, Production, Engineering and Accounting. If you would like to discuss them, just call your Bell Telephone Business Office.

BELL TELEPHONE SYSTEM

Our Municipal Notebook

Cities Tell Public Improvement Plans

NEARLY $5,000,000,000 will be spent for public improvements in the next five years by 141 U. S. cities that took part in a survey. About one-fourth of the total—set at $4,868,691,000—will be spent this year.

General obligation bonds will finance more than one-half of the sum. That form of financing is more popular among cities over 100,000 in population, while revenue bonds are the device chosen most often by cities under 100,000.

Those are among the highlights of a survey made by the Municipal Finance Officers Association for President Eisenhower's Council of Economic Advisers. Cooperating in the survey were the International City Managers Association, the American Society of Planning Officials, and the American Muncipal Association.

Information about cities' capital-improvement programs was obtained from questionnaires sent to 334 U. S. cities, including all cities with more than 100,000 population and a selected sample of cities of 10,000 to 100,000 population.

Other conclusions reached after a study of the answers received from the reporting cities were:

- Municipalities have enough of a borrowing margin for their planned improvement programs.
- A growing number of cities favor a full or partial pay-as-you-go policy for financing improvements.
- Most cities already own or control the land needed for planned programs.
- About four out of five of the cities reporting believe that some changes would be required in state and local legislation if their public-improvement programs were to be expanded or speeded up.
- The cities do not see tax and debt limits as being as great a block to planned construction as other factors, such as the desire to protect the city's credit standing, reluctance to impose new taxes, and difficulties in getting bond approvals at local referendums.

Illinois Conservation Area Legislation Upheld

THE first hurdles in testing the constitutionality of the Illinois Neighborhood Conservation Legislation, enacted in 1953, were overcome on March 15 with favorable decisions of the Circuit Court. The constitutionality of the Urban Community Conservation Act and of the 1953 amendments to the Neighborhood Redevelopment Corporation Act were both upheld.

The major question involved was the validity of exercising the right of eminent domain in conservation areas. Both cases will be appealed to the Illinois Supreme Court.

For Less Irritation In Urban Life

AT ONE of the National Conferences on City Planning some years ago, the late George B. Ford—then a leader in the community planning movement—suggested as a theme for a future conference, "The City Beautiful: Are We Still Afraid of It?" Mr. Ford's point was that in the early years of American town planning there had been over-emphasis on the "city beautiful" idea as contrasted to the "city efficient." But that more recently, the pendulum had swung too far in the opposite direction. Another planner of that day — Arnold W. Brunner—joined the fray by remarking that there was more to rational town planning than "tying pink bows on lampposts."

Since then the pendulum has oscillated considerably between the "esthetic" and the "practical" in community development, but with increasing emphasis on the need for achieving a rational balance between the two. In the hope of contributing to this search for sanity, THE AMERICAN CITY asked Architect Richard Neutra, author of *Survival Through Design*, published last month by the Oxford University Press, for a statement of why, in his opinion, the readers of this magazine ought to be concerned with achieving a maximum of healthfulness and amenity and a minimum of irritation in urban life. This article appears on page 122.

THE AMERICAN CITY

Harold S. Buttenheim, Editor • **Alden W. Welch**, Research Editor • **William S. Foster**, Engineering Editor
Carl Eric Carlson, Associate Editor • **William T. Dulac**, Associate Editor

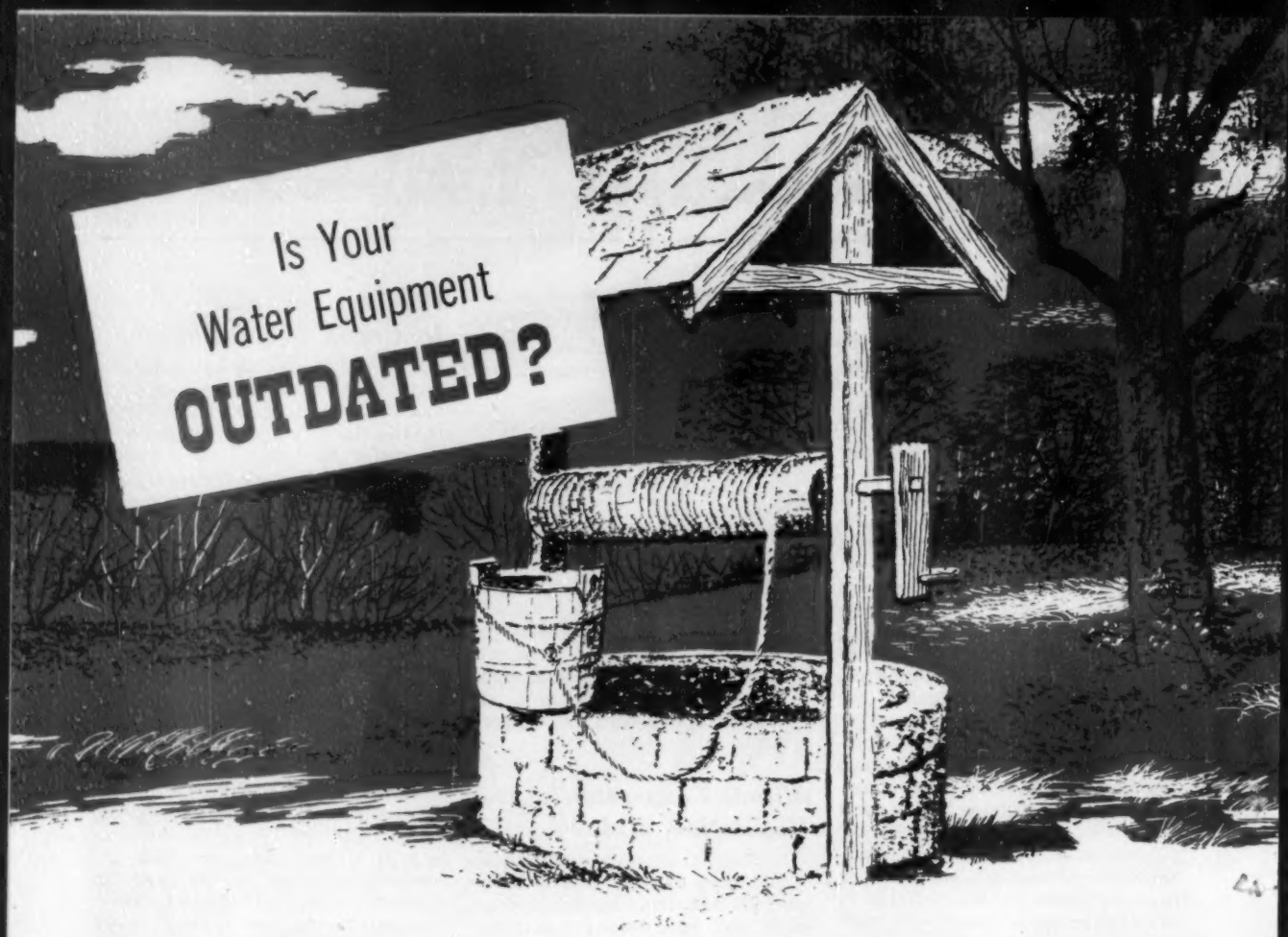
Editorial and Executive Offices:
470 Fourth Avenue, New York 16, New York • MUrray Hill 5-9252

Edgar J. Buttenheim, President • **George S. Conover**, Vice-President
Edwin Wagner, Treasurer • **Edgar M. Buttenheim**, General Manager
Myron MacLeod, Advertising Manager • **Edward George Allen, Jr.**, Promotion Manager
Curtis R. Buttenheim, Southern Sales Manager • **Edna A. Jones**, Production Manager

Branch Offices:
Chicago 6 • 1719 Daily News Building • Central 6-2853
George S. Conover, Vice-President • **Warner H. Robinson** • **Arthur B. Burgan**
Cleveland 14 • 420 Leader Building • Robert C. Burton
Los Angeles 27 • 2238 Ben Lomond Drive • Albert T. Miller, Pacific Coast Manager

VOLUME 69, NUMBER 4

THE AMERICAN CITY IS ISSUED MONTHLY BY THE AMERICAN CITY MAGAZINE CORPORATION
Subscription $4 per annum in any part of the world. Single copies, 50 cents. Back copies, $1. Entered as second-class matter, July 20, 1910, at the Post Office at New York, N. Y., under Act of March 3, 1879. Printed in the U. S. A. THE AMERICAN CITY is indexed regularly by Engineering Index, Inc., and the Readers Guide to Periodical Literature.



Think of Tomorrow's Water Needs Today

Growth—production—expansion—apply those words to city, farm or factory and you find that accomplishment is tightly tied to water. And yet planning for tomorrow's water needs is too frequently postponed until tomorrow becomes—today.

Layne ground water development service is unique in the dictionary sense of the word. A service that may—and frequently does—start with exploration. A service that has no ending—a continuing service—for Layne's responsibility to a Layne project or installation lasts as long as the need for water exists.

That service is available to everyone. It costs no more—and usually a lot less—because from initial surveys and test drilling to completed installation Layne brings to any job of any size the pooled knowledge of nearly three quarters of a century.

The Layne organization is glad to be of service on any immediate phase of ground water development—maintenance or modernization of existing equipment—new pump equipment—drilling—exploration or water treatment.

But also it is wisdom to use that service today in forecasting the needs of tomorrow. Why not permit Layne to make—with your assistance—the plans that will provide a dependable adequate water supply for the years that lie ahead.

LAYNE & BOWLER, INC.
Memphis 8, Tennessee

Layne Associate Companies Throughout the World

Layne

■ Agriculturists will be interested in a free booklet—"Layne for Profitable Irrigation." Sent upon request.

Water Wells • Vertical Turbine Pumps • Water Treatment

Competition for Public Transportation Plan

A NATIONWIDE competition designed to develop plans for popularizing public transportation as a means of relieving downtown traffic congestion in the nation's cities has been announced by the Urban Land Institute, 1737 K St. NW., Washington 6, D. C.

The competition will be open to transit systems and their executives and to municipal and county officials, journalists, editorial writers, and others having a direct interest in persuading downtown workers and shoppers to use buses and streetcars instead of crowding the streets with private autos. The entries will be judged by a jury composed of seven well-known businessmen, transportation specialists, and city planners.

Separate awards will be made for entries from cities with a population of 500,000 or more and for cities with populations of less than 500,000. In each case, the best entry will receive a Certificate of Exceptional Merit and the five other entries ranked highest by the jury will receive Certificates of Merit.

The deadline for the contest is October 1, 1954. Further details may be obtained by addressing the Central Business District Council of the Institute.

Federal Housers Enter Private Practice

ARTHUR C. HOLDEN and Associates, architects and planners, have admitted to partnership Messrs. John Taylor Egan, William D. Wilson, and John B. Corser, Jr., and the firm name has been changed to Holden, Egan and Associates.

John Taylor Egan was former Commissioner of the Public Housing Administration, Housing and Home Finance Agency. The new offices are located at 215 E. 37th St., New York 16, and Dupont Circle Bldg., Washington 6, D. C.

Jacob L. Crane, also a well-known federal housing and planning official, has resigned from his position within the offices of the Housing and Home Finance Agency in order to enter private practice.

Mr. Crane, who served as Assistant to the Administrator in charge of the International Housing Staff of the HHFA from 1942 to the present, has had a housing and city planning career covering a span of more than 40 years, including a variety of other federal assignments.

His 25-year career in private practice included serving as a planning and engineering consultant for some 60 American cities. He is past president of the American Institute of Planners, and is establishing his own practice in Washington, D. C., as a consulting engineer specializing in housing and city planning.

Growing Demand for New Golf Courses

ACCORDING to the National Golf Foundation, the 1953 rate of about 50 new golf courses opened for play will be exceeded in 1954 and 1955. Rex McMorris, executive vice-president of the Foundation, states that there is now four times more activity and interest in new course construction than there has been in any year since World War II. "Today," he says, "our 5,056 golf courses are crowded with 3¼ million golfers who play at least ten rounds or more a year—plus an estimated million more who play occasionally. This is double the number of golfers in 1930, when there were 5,856 courses open."

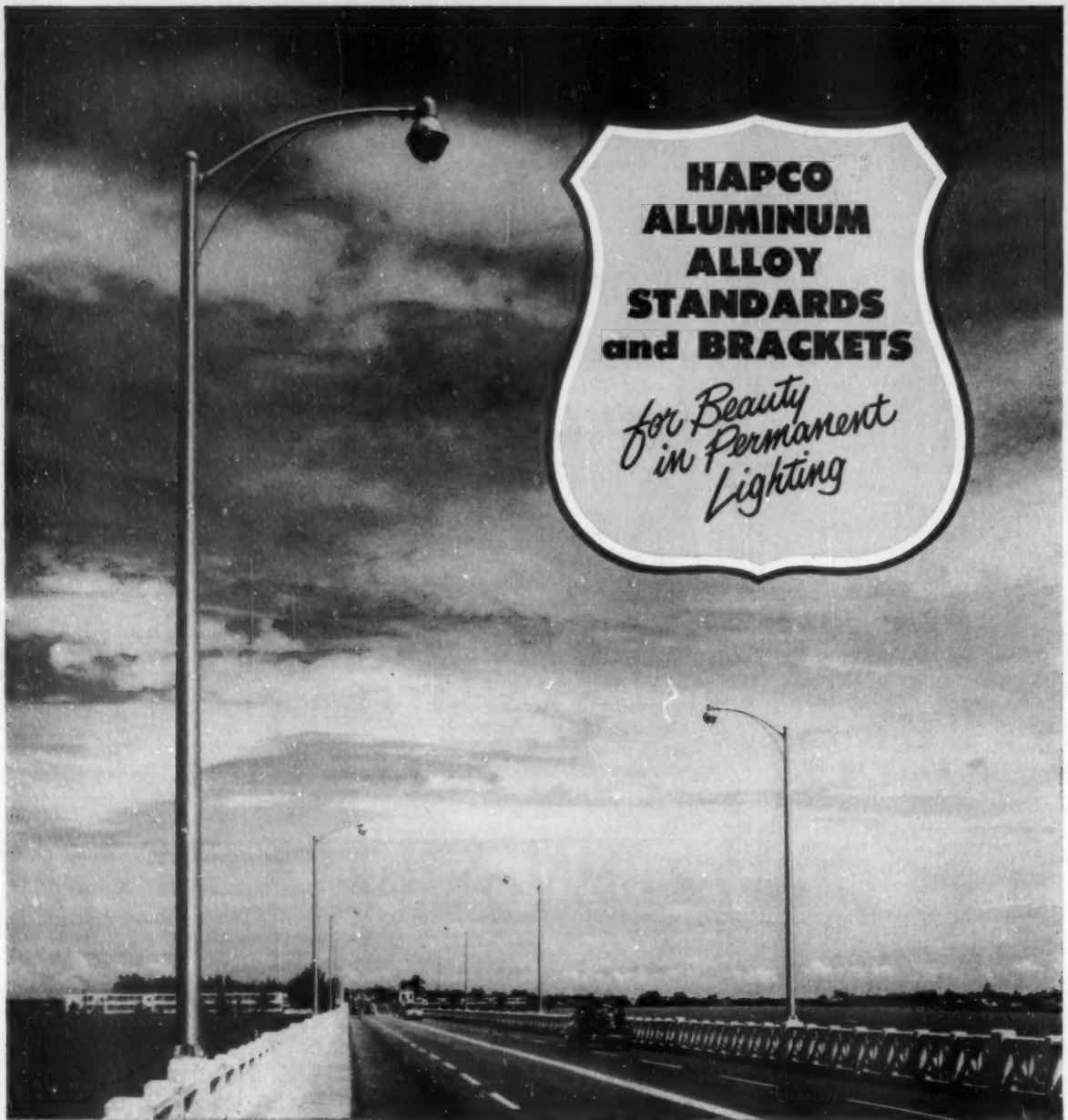
Mr. McMorris credits this increase in golfers to several factors:

"Thousands of our veterans learned to play golf in service or while in veterans' hospitals during the war years; the Professional Golfers Association of America in one year alone furnished free golf instruction to more than 36,000 youngsters through its Junior Golf Program; high schools and colleges, conscious of the fact that golf—more than any other sport—is carried over into later life, have instituted intra-mural and inter-school golf programs; our rising standard of living, shorter working hours and earlier retirement ages, have provided more people with the time and the means to enjoy the game; and last but not least, the very nature of golf—placing no premium on age, sex, physical stamina or skill—gives it a universal appeal which has transformed it from the 'silk-hat' game of the twenties to a game for everyone."

Meanwhile the number of new courses being built each year has hardly offset those forced out of operation by the housing boom, superhighways, super-markets, and other projects.

EDITORIAL NOTE: Inquiries about planning and promotion of new courses can be addressed to the National Golf Foundation at 407 S. Dearborn St., Chicago, Ill.

"What's wrong with this picture?"



DESIGN FEATURES

- One-piece construction in all lengths to 40 ft. No longitudinal seams or transverse joints.
- Heat-treated alloys used throughout, give consistently uniform high strength.
- Designed for either overhead circuits or underground wiring.
- Venetian column type of taper acclaimed by architects.
- No forms or mandrels used to shape pole. Taper can be varied to suit individual requirements.
- Light weight cuts installation cost.
- Entire surface ground to mat finish which gives best surface for non-reflecting, durable oxide film.
- No painting needed at any time. Saves maintenance cost.

SPECIFICATIONS

Standards available up to 40 ft. in height, with Standard Base or Transformer Base.

Brackets from 3 ft. to 15 ft., in round or oval cross-section, with 1¼ in. or 2 in. slip fitter or threaded ends.

Handholes, Pole Top Pin Assemblies, Ballast Attachments, Spreader Arms, Levelites, and other accessories available.

HUBBARD ALUMINUM PRODUCTS COMPANY

MANUFACTURERS OF HAPCO QUALITY ALUMINUM PRODUCTS

A Division of HUBBARD and COMPANY

6301 Butler Street • Pittsburgh 1, Pa.

Local Spending Policies—Their Role in Nation's Economy

THE GREAT POWERS which local governments possess as a stabilizing force in the national economy are being increasingly recognized. The article by Robinson Newcomb, which appears on page 108 of this issue, points to the importance of advance planning for local public works.

This concept, long advocated by THE AMERICAN CITY, has been accepted by the President's Council of Economic Advisers, as is clearly stated in the *Economic Report,* transmitted to the Congress in January 1954.[1] Title VII of the proposed administration-backed housing legislation (S. 2938, HR. 7839) provides $10,000,000 for a reserve of planned public works —to resume noninterest-bearing planning advances to local and state bodies for public works plans, repayable when construction is undertaken, in order that such works can be ready for construction if the economic situation should require it.

As justification for resuming such planning advances, the *Economic Report* declares:

"It is easier to plan, organize, and coordinate federal public works, and to harmonize them with economic requirements, than to bring to readiness the programs of thousands of state and local governments. Yet almost two-thirds of total public construction is for local account. While it is highly important that the planning, scheduling, and financing of local facilities remain the business of the states and municipalities, the federal government should be prepared, in case of serious need, to help the state and local governments work out their problems."

Importance of Government Spending

With the decline in federal spending for goods and services, the sum of state and local government expenditures in 1953, more than $25,000,000,000, takes on added importance, especially when coupled with evidence of their financial strength—cash bank accounts and security holdings now amount to more than $23,000,000,000. In 1953, for the first time, state and municipal bond issues topped $5,000,000,000. Yet, although estimates vary widely, many authorities believe that state and local government backlogs of construction projects involve $100,000,000,000.

Noninterest-bearing loans for aid in planning local public works are, obviously, no panacea for the nation's economic ills. They will be of help to some cities in some situations. Outright grants to local governments to accelerate progress in this field, in the event of a widespread drop in employment have also been advocated. Questions of timing, however, continue to loom important—there is still an appreciable lag between preparing the plans and awarding construction contracts.

Stabilizing Municipal Outlays

As stated by William Stanley Parker, well-known consultant on public works programming,[2] municipal governments cannot think in terms of national economic conditions that require some united local action. But they can, individually, think in terms of stabilizing their own expenditures over a long term, which will be to their own advantage and could create an economic gyroscope of considerable importance.

Mr. Parker urges the establishment of long-term municipal reserves, now permitted in more than half the states, as a sound approach to the stabilization problem, with federal public expenditures consciously fluctuating counter-cyclically to offset drops in private enterprise activity.

A specific step toward wise local timing of capital expenditures is illustrated by an amendment to the Constitution of Pennsylvania, ratified in November 1951, which is aimed at stabilizing the debt-making power of the City of Philadelphia and at providing a reserve of unimpaired borrowing power for possible future lean years.[3]

The amendment bases the debt limit of the city for nonself-supporting municipal indebtedness in any given year on 13½% of the average of taxable real-estate assessments in the city for the 10 immediately preceding years, rather than on 10% of the current taxable real- and personal-property values, as heretofore.

It is through undramatic devices of this type that local governments will be enabled to play their major role in fostering economic stability rather than engaging in any major new swift-moving counter-cyclical measures for which they are ill-equipped.

Municipal officials should be aware of the many other contributions, in addition to public-works and capital-improvement programs, that they can make toward promoting a larger degree of economic stability through community leadership. Local civic groups, labor unions, and business associations can be called together to study and take action on local employment and industrial development problems and programs. In many cases community economies can be re-oriented, diversified, and greatly strengthened through such planned action.

1. Available from Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. January 1954. 225 pp. 65 cents.
2. See "Policies for the Control of Public Works," by W. S. Parker, THE AMERICAN CITY, October 1953. (Reprints available upon request to the Editorial Department).
3. See "For Wise Timing of Capital Expenditures," by Karl Scholz. THE AMERICAN CITY, February 1952.

An Idea for Parks— "Little U. S. A.'s"

THE COSMOS CLUB BULLETIN of Washington, D. C., devotes its December 1953 issue to some of the work of the late Frederic A. Delano (1863-1953), and his influence on national, state, and local planning in many different positions. The article, by Horace W. Peaslee, gives some thought to an appropriate commemoration. The suggestion is one which park and playground officials may be interested in adopting—it is for a playground with educational byproducts, which grew out of something Mr. Delano had devised for the entertainment of his grandchildren.

"On a large lawn area he laid out a map of the United States, at the scale of 1 foot to 20 miles, with the boundary oceans, Great Lakes, rivers, and principal cities indicated. It was used as a putting green, and as the youngsters played across the continent they gained lasting impressions of space, and distance, and geography. The third dimension was lacking, but the challenge of its possibilities led to the idea of a great relief map as a public park or playground feature, or school auxiliary. The game element prescribes its use by children—inviting, instead of prohibiting, trespass.

As Mr. Peaslee points out in his article, the project has infinite possibilities of variations adaptable to var-

KELLY-CRESWELL • Leader in Highway-Municipal-Industrial Striping Equipment

New K-C Gun Provides 100% Air Reserve with Your Present Compressor!

This new gun is diaphragm-operated, eliminating the air cylinder and upper packing gland—the greatest cause of air loss in automatic spray guns.

Heavy Duty C for crosswalks, parking lanes and meter limits

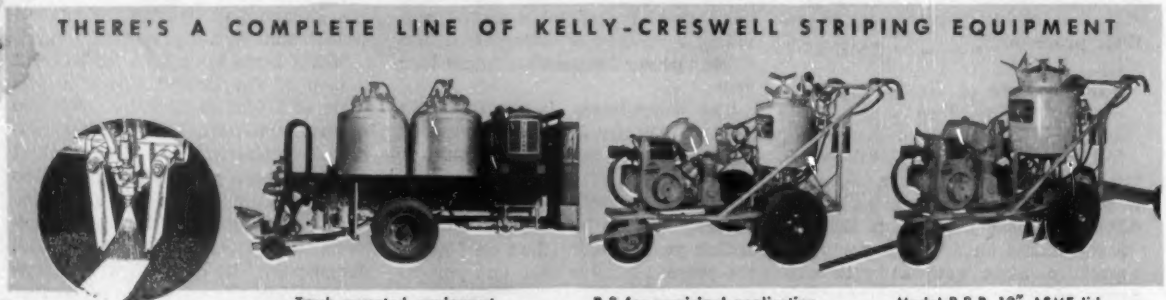
Developed by Kelly-Creswell engineers especially for striping, this new automatic gun is built on a completely new but proven principle (Patent pending). No working parts exposed.

And Look at These *Extra* K-C Advantages!

- Continuous operation, less cleaning or maintenance.
- Faster operation.
- Uniform film thickness; accurate pattern; longer production runs.
- Ability to handle a greater range of zone marking materials, *including reflective* types.
- Ability to deliver a greater volume of materials, thoroughly atomized for *fast drying*.

Operators like K-C Stripers because of their perfect balance, easy maneuverability.

THERE'S A COMPLETE LINE OF KELLY-CRESWELL STRIPING EQUIPMENT



Truck mounted equipment

B-3 for municipal application. Self-propelled.

Model P-3-P, 10" ASME lid assembly. Self-propelled.

An Exclusive K-C Feature

Kelly-Creswell patented air curtains apply keen cut, straight edged lines to any type of surface, smooth or rough, at any speed, by directing compressed air or exhaust gas against the edges of the spray pattern.

More than 1000 national, state, county and municipal governments and industrial firms are using K-C stripers today. For detailed information about Kelly-Creswell stripers, and the new striping gun, write or call. *You have a right to expect more from a Kelly-Creswell striper.*

KELLY-CRESWELL COMPANY • Xenia, Ohio • U.S.A.

ious sites and cost limitations. It may be large or small, flat or in relief, plain or embellished with miniature plant materials, and priced accordingly.

Purdue Sponsors Tenth Arson Investigators' Seminar

THE Tenth Annual Seminar and Training Course for Arson Investigators will be conducted at Purdue University, Lafayette, Indiana, May 3 to 7, 1954. The seminar and training course offers an opportunity for specialized study and discussion of arson-investigation problems under the guidance of outstanding police and fire specialists from all parts of this country and Canada. The seminar is conducted by the Public Safety Institute of Purdue University, with the cooperation of local, state, and national organizations interested in arson control and prevention. For additional information, address Professor Shelby Gallien, Seminar Director, Public Safety Institute, Purdue University.

Parking-Meter Ads— Tried and Abandoned

To the Editor, THE AMERICAN CITY:

Albert S. Bard's article, entitled: "Parking-Meter Ads in Philadelphia Illegal," published in the March issue of THE AMERICAN CITY, leads me to endorse his argument against this type of advertising by citing our experience in Phoenix.

In July 1948 the city entered into a 10-year contract with a local firm for the use of the parking meters for advertising purposes. Of course, the city was to derive a percentage of the revenue for the advertising.

Being opposed to parking-meter advertising, as well as to tree and pole advertising, City Manager Ray W. Wilson considered the possibility of discontinuing this contract several months ago. In checking into this, it was found that the benefits in revenue to the company and the city were insignificant. In view of this and in a spirit of cooperation, the firm holding the contract consented to abandon this advertising and the frames were removed from parking-meter posts. The issue had never become a public one nor had any legal question been raised about the signs.

JOHN W. BEATTY
Planning Director
City of Phoenix (Ariz.)
Planning Board

Executive Secretary Named for Air Pollution Control Association

HARRY C. BALLMAN, former smoke-regulation engineer of Columbus, Ohio, has been named Executive Secretary of the Air Pollution Control Association and senior incumbent of the Air Purification Fellowship maintained in Mellon Institute, University of Pittsburgh, by the Association.

Mr. Ballman has had extensive private and public organization experience in the air-pollution field. In 1947 he was assistant combustion engineer of the Indianapolis Board of Air Pollution Control. A year later he took up residence in Richmond, Va., as the city's smoke-regulation engineer. When Columbus made a similar offer in 1949, he accepted in order to return to his home state.

Aerial Maps Show City Growth

How open fields are being converted to housing developments in the rapid spread of urbanization throughout the country is clearly shown in the above two photos of the same area in Dallas, Texas—the one at the left taken in March 1951; the one at the right taken in January 1953. The Jack Ammann Photogrammetric Engineers, Inc., of San Antonio, took the photos, after negotiating a contract with the City of Dallas for the topographic mapping of the entire city and considerable surrounding territory, approximately 200,000 acres in all. The photos were made with a precision mapping camera. The topographic maps are compiled by the firm's stereoscopic photogrammetric plotting instruments, using the photos. The finished maps are at a scale of 1 inch to 200 feet, showing contours at a 5-foot interval, in addition to all ground details.

POWERS American

Series 450 CONSTRUCTION AND OVERHEAD MAINTENANCE BODY

Does the Work of TWO TRUCKS

Ladder can be revolved 360° at elevations from 30° to 75°. In 23'6", 26'6", and 30'6" mechanical units, or 35' hydraulic model.

Body is 108" long, for installation on dual-rear wheel chassis having cab-to-axle dimension of approximately 60"

Here's a multi-purpose body that does work normally requiring two or more specially-equipped vehicles.

FOR OVERHEAD WORK . . . the body has a Powers-American mechanical or hydraulic Aerial Ladder, in a working height best suited to individual needs.

FOR SERVICE WORK . . . compartments provide space for the orderly storage of a wide assortment of tools and parts.

FOR CONSTRUCTION WORK . . . simplified, easy-to-use derrick handles poles up to 35 ft. in length. A 10,000 lb. underslung winch pays out cable beneath the body floor. A universal swivel sheave permits winch line pull in any direction, without limitation.

COMPLETE DESCRIPTION is given in Bulletin No. 118. A copy, with quotation, is yours for the asking.

Derrick utilizes flexible steel cable instead of conventional center leg. Stows in loading area rack when not in use.

POWERS-AMERICAN DIVISION
McCABE-POWERS AUTO BODY COMPANY
5900 No. Broadway • St. Louis 15, Missouri
428 Latham Sq. Bldg. • Oakland 12, Calif.

Regulations of Parking Lots Near Homes

COMMUNITIES recognize that ill effects may arise when parking lots are next to houses. But at the same time, they seek to ease parking jams in commercial areas.

In order to minimize the drawbacks of parking lots near or in residential zones, communities have turned to the adoption of special zoning regulations that control the location and use of such lots and regulate their physical features.

The American Society of Planning Officials has just finished an analysis of 41 such zoning ordinances in force in cities, towns, and counties throughout the nation. Results of the study are set forth by the society's report, "Zoning for Parking Areas in and Near Residential Districts."

All Ordinances Are Protective

All the ordinances require special protective devices, such as barriers, when parking areas adjoin dwellings. Other requirements concern location of entrances and exits.

Ordinances may require one of three kinds of barriers designed to screen dwellings from parking areas, the report says. First is the solid wall or fence which cuts off some sight of the lot, deflects some sound, and makes the area less accessible to children. It will also help keep car headlights from flashing into the windows of a house.

Second is the compact evergreen growth which may be an adequate substitute for a wall or fence, if it is dense enough and may improve the looks of the lot if it is planted outside the wall.

Further Analysis

Third and last is the yard which, when landscaped, may also look like the yard that would be there if the land were in use as a residence instead of a parking lot.

A number of ordinances specify that entrances and exits open onto the business side of the street and not onto the residential side. Some also regulate the distance that exits and entrances must be from schools, public playgrounds, churches, hospitals, and public libraries.

Virtually all the ordinances analyzed require that any lighting used in off-street parking be arranged so as to reflect the light away from adjoining residences, according to the report.

A number of communities stipulate that parking must be solely for private passenger vehicles.

Most say that there can be no commercial use—such as an automible repair shop—on the lot.

Another common regulation is that no fee shall be charged for parking.

Nearly all require that no signs shall be posted except those necessary to show entrances and exits, to guide traffic, and the like.

Communities that lay down all four of the regulations mentioned above are: Cincinnati, Cleveland, Wichita, Kans., and Midland, and Muskegon, Mich. Those to have have passed three of the four include: Detroit and Kalamazoo, Mich., Prince Georges County, Md., and Lexington and Fayette County, Ky.

Parking areas in general, regardless of their nearness to residences, come in for some regulations in all the ordinances studied, the report points out. All require parking lots to be paved and to have bumper guards where needed.

Boston Studies Zoning Policies

THE PLANNING BOARD of Boston, Mass., which is engaged in a large-scale rezoning study, has proposed the Floor Area Ratio device for use in regulating through zoning the building bulk of residential and non-residential structures. This method of controlling building density sets maximum floor area ratios in each zoning district. The "F.A.R." is the ratio of the total areas of all floors in the building to the area of the lot on which it is placed. Floor area is taken to include not only room areas, but also halls, closets, stairwells, and thicknesses of wall construction.

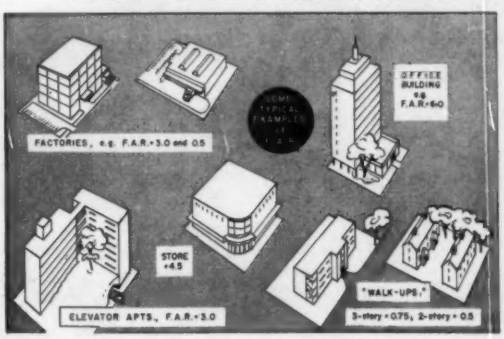
A floor area ratio of 1.0 could represent a one-story building covering the entire lot, or the same floor area in a two-story building covering half the lot, or a four-story building on a quarter of the lot, etc.

Shown here is one of the illustrations from the Boston City Planning Board's report, "Zoning Policies for Boston," which was issued to promote public discussion and understanding of the aims and proposals of rezoning. The report is available from 43 City Hall, Boston 8, Mass.

PROPOSED MAXIMUM FLOOR AREA RATIOS AND OFF-STREET LOADING AND PARKING REQUIREMENTS

PREDOMINANT TYPE OF USE	CENTRAL BOSTON		OUTER AREAS OF HIGH ACCESSIBILITY		OUTLYING AREAS	
FACTORIES and WAREHOUSES	2.0–4.0	L p			0.5	L p
OFFICE BUILDINGS	8.0–8.0	L	1.0–4.0	L p	0.5	L p
RETAIL STORES	3.0–5.0	L	1.0–2.0	L p	0.5	L p
ELEVATOR APARTMENTS	2.0–3.0	D p	1.5	D p		
WALK-UP APARTMENTS	0.75	D p			0.5	D p
SINGLE-FAMILY DWELLINGS						D

D = other density controls supplementary to, or replacing floor area ratios
L = off-street loading required, with exceptions for small parcels
P = off-street parking required
p = off-street parking at lesser ratio than in area where highest standard applies



Assignment:
Take a picture of tomorrow!

What will be the face of your city tomorrow? Where will its streets, parks and residential areas be located? What will be the direction and design of its industrial growth?

AERO surveyors are taking off each day to find the answers to these and other city planning problems. For tomorrow's plans demand maps today . . . maps of precision accuracy, delivered with speed that comes only with air survey methods.

AERO's skilled team of flight crews, engineers and map-makers, working with highly complex instruments, produce maps for one-half the cost, or less, of ground survey methods. And they conserve the manpower of busy city engineering staffs. We have mapped cities like Cleveland, Philadelphia, Raleigh, N. C., and Ottumwa, Iowa. Let us show you how AERO can help advance your plans for tomorrow!

AERO SERVICE CORPORATION

Philadelphia 20, Pennsylvania

AIRBORNE MAGNETOMETER SURVEYS
PRECISE AERIAL MOSAICS • TOPOGRAPHIC MAPS
PLANIMETRIC MAPS • RELIEF MODELS • SHORAN MAPPING

Oldest Flying Corporation in the World

Affiliates:
AERO SERVICE CORPORATION *(Mid-Continent)*, TULSA
AERO SERVICE CORPORATION *(Western)*, SALT LAKE CITY
CANADIAN AERO SERVICE, LTD., OTTAWA

A Master Plan Needs A Financial Plan

To the Editor of THE AMERICAN CITY:

In the January 1954 issue of your excellent AMERICAN CITY (which I have read for 30 years) I noted an article entitled, "Do's and Don'ts for Planning Commissions," by Mr. Mansur. In listing the component parts of a master plan, it gave sound advice.

But absent was a *Financial Plan.* For many years I have felt that no Master Plan was complete unless it combined *an analysis and forecast of the revenues available in a community from property taxes, bonds, and other sources,* over a period of the next 10 years, to finance the physical improvements recommended in a Master Plan.

To fail to do this would be the same as though some member of a family were to frame a lenghty report as to why and when the family needs a new piano, an automobile, refrigerator, paint job, etc., but gave no consideration to the income or wealth of the family from which payments would come for these improvements.

So, if I were in a community in which a Planning Commission presented a Master Plan which recommended certain improvements, I would balk at proceeding until the Commission added an analysis of the community's ability to pay for these improvements over a period of years.

C. A. CROSSER
Executive Secretary
Municipal League of Seattle and King County
Seattle 4, Wash.

Mr. Mansur's Reply

To the Editor of THE AMERICAN CITY:

I agree that a financial plan is very important. The subjects I listed as comprising a Master Plan were taken from the California Planning Law. The paragraph in my original manuscript that explained this was omitted in the printed article.

The planning laws adopted by legislative bodies, both state and local, are not always what the planners desire. In California we have succeeded in having the planning laws improved to a considerable extent. Until recently the California State Planning Law required a planning commission to file a copy of its annual report with the State Planning Board, although there was no State Planning Board! We still do not have a state planning agency in the rapidly growing state of California.

As for the preparation of an analysis and forecast of the revenues available in a community from property taxes, bonds, and other sources over a period of the next 10 years, it is a question whether this is the duty of the planning commission or some other department of the city.

EVERETT B. MANSUR
Planning Consultant
San Gabriel, Calif.

Albion, Mich., Avoids Annexation Woes Through Buying Contiguous Land

By NORMAN H. WIENER
Mayor
Albion, Mich.
(As told to Rae S. Corliss).

THE INDUSTRIAL and population growth of Albion brought our city government face to face with an acute problem of expansion a dozen years ago—a problem which became the more critical because Sheridan Township, in which new industry and its employees were locating, refused to be annexed to the city.

On several occasions proposal for such expansion were defeated — not by city resident, who favored the annexation, but by township voters who feared an increase in taxation.

In spite of the fact that we made certain concessions to township residents, promising there would be no increase in the tax rate for several years, although water, sewage, police and fire protection would be extended to the area, rural voters still did not favor annexation.

Just 25 miles to the west we had seen the spectacle of the Battle Creek–Lakeview stalemate, where Battle Creek Township had been built up into a community of nearly 20,000 persons adjacent to the city limits. Each proposal for annexation resulted in more negative votes in the township, or Lakeview.

Our industrial plants, the Gale Manufacturing Company, the Albion Malleable Iron Company, and the Union Steel Products Company were growing into leaders in their respective fields, selling products all over the world. Smaller plants were growing up, too, and Albion College was becoming one of the largest denominational schools in the Middle West. Our population was nearing 15,000 and there were not 50 good building lots left within the city limits. Albion had to do something to acquire land for expansion.

In 1949 the Corning Glass Works of Corning, N. Y., decided to build its new $5,000,000 Midwestern plant here, asking but one concession — that we make housing available for 1,200 new families.

The idea occurred to us that we might purchase adjacent farmland in Sheridan Township to the north, which seemed the natural direction for growth.

Investigating the legal aspects of the situation, we found that under Section 9 of Michigan State Act No. 279 of 1909, land that was vacant and contiguous with land within a city limit could be purchased and annexed by resolution of the city commission.

In the last five years Albion has purchased two farms and a portion of a third for a total of 184 acres of land—all in Sheridan Township. The cost was $39,000. To date, building lots in two new subdivisions have been sold for a return of $16,000. By next July approximately 300 additional new homes in the annexed area will be completed under a federal housing act project and will be ready for occupancy and ultimate sale.

In time, all money expended for the land will have been returned to our treasury. One tract of 100 acres, located along the New York Central Railroad, is being held by the city for future industrial expansion.

We do not believe we are done with this type of expansion. To our south in Albion Township is other adjacent farmland, which, in time, may be purchased. Then, rather than having to face a costly campaign and election which a comparatively few township voters could defeat, we shall annex such land by a simple majority of six ballot—those cast by the members of our city commission.

We commend this plan to any Michigan city plagued with annexation problems in the age-old battle of city versus township.

EDITORIAL NOTE: Mayor Norman H. Wiener is serving his 20th year as head of the city government of Albion, Mich. — far longer than any predecessor, none of whom has exceeded six years in office.

1 pennies

5 nickels

10 dimes

25 *quarters

DUNCAN-AUTOMATON with its new time-saving convertibility adjustment makes changing time limits as easy as it is to loosen a screw and reset to longer or shorter periods of time. Automatically speaking, D-A puts an end forever to old-time pre-winding to make mechanism work automatically, upon insertion of a coin.

DUNCAN-MILLER manual meter digests dimes and quarters* along with nickels, easier than other makes take pennies and nickels . . . for D-M is the original meter made to register dimes in combination with nickels and pennies. For the job of adequately metering curb or parking lot, why don't you write us today for more details on the products of America's largest manufacturer of parking meters.

*Quarters usually reserved for multiple hour parking lot meter.

DUNCAN
PARKING METER CORP.
835 N. WOOD ST. CHICAGO 22, ILL.
Factory at Harrison, Arkansas
Manufacturers of the DUNCAN-AUTOMATON fully automatic and the DUNCAN-MILLER manual parking meters.

Sewerage & Sewage Treatment

Enzymes Beat Seasonal Overloads

FIVE MONTHS out of each year, the sewage-treatment plant at Modesto, in central California, struggles with packing-plant wastes that are equivalent to the volume of sewage from a population of 400,000—20 times greater than the population of the city. Aggravating the difficulty is the excess of plant wastes at a time when the Tuolumne River is at its lowest level.

Modesto's plant treats industrial sewage separately from domestic sewage. Domestic wastes receive primary clarification, biofiltration, and secondary clarification. Industrial wastes pass through fine screens, and then through a Dorr Vacuator, a dual-deck aeration system, two oxidation ponds, and finally, to a percolation bed of 57 acres. Excess flow goes to the river. Domestic and industrial effluent pass through the oxidation ponds and percolation bed simultaneously.

Despite the thorough treatment provided, the plant suffered from foul odors during the period of excessive industrial load. Chlorine was applied to the effluent, but continued complaints indicated that the treatment was not effective. For the past two years, Marvin Ray, director of public works, has been using the enzyme treatment of Pent-a-vate, which, it is claimed, produces complete hydrolysis of troublesome organic matter. The enzyme is a clear liquid that is applied to the waste after it has passed through the screens and Vacuator, and before it enters the primary deck aerator.

Application and Effectiveness of Enzymes

For the first four days of this season's run, the enzyme was added at a rate of 150 gallons per day, 9.2 parts per million for the combined flow. It was then added at a rate of 120 gallons per day. Chlorination was discontinued at the recommendation of the manufacturer.

After two seasons' application, Mr. Ray has drawn several conclusions about the enzyme's action:

1. The enzyme has controlled odors more effectively than any other chemical used.
2. The BOD decreased steadily throughout the test period, sometimes as much as 87%.
3. The cost of application is about the same as chlorination.
4. Sludge-blanket formations on the oxidation ponds have been eliminated.
5. Dissolved oxygen has appeared in the secondary oxidation pond and the percolation bed.
6. Percolation has been greatly increased by opening up the soil underlying the percolation bed.

Mr. Ray believes that the greatest effectiveness of the enzyme treatment is in its ability to help plants that suffer from periodic overloads. He plans to continue to use the material for the entire 1954 canning season.

For Vacationers' Pleasure

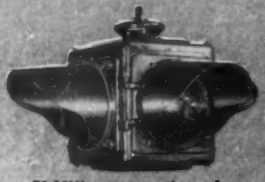
WISCONSIN is a state that takes pollution abatement standards seriously. Many rivers and lakes make it one of the Midwest's favorite recreation areas.

Delevan, one of Wisconsin's more popular resort cities, abides by these clean-stream standards meticulously. To implement this policy, the city recently completed a Biofiltration-type plant able to treat 1,000,000 gallons of sewage contributed daily by the 4,000 residents and seasonal visitors.

The plant has 55-foot primary and secondary clarifiers equipped with sludge-removal mechanisms, and an 80-foot-diameter trickling filter served by a distributor and a digester with a diameter of 45 feet. The sewage-removal unit, distributor, and digester are products of the Dorr Company.

The plant was designed by Jensen and Johnson, of Elkhorn, Wis.

Wisconsin's streams remain clean and beautiful with the help of treatment plants like this.

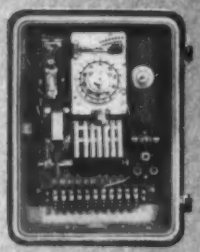


F14SW—one-section, four-way beacon, span wire mounted.

A32PM—three-section, two-way, adjustable face, pedestal mounting.

F34SW—three-section, four-way, span wire mounted.

AUTOFLOW



Model 102S Non-expansible. Single timer, six circuits.

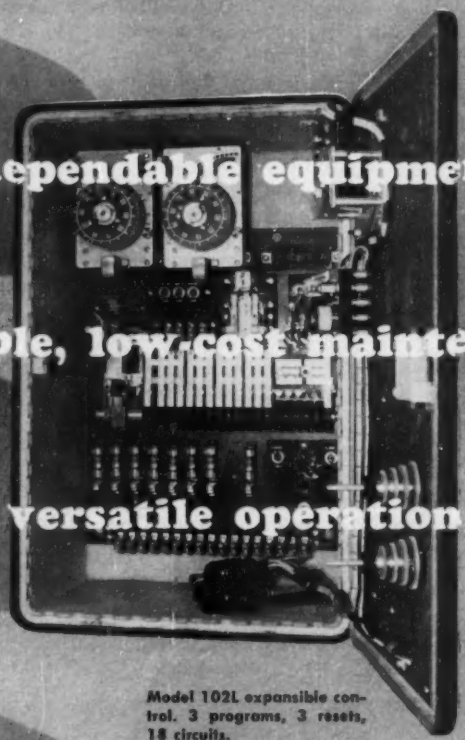
dependable equipment

simple, low-cost maintenance

versatile operation

WPCF1S — single-circuit flasher control with radio suppressor.

A13SW—one-section, three-way, adjustable face.



Model 102L expansible control. 3 programs, 3 resets, 18 circuits.

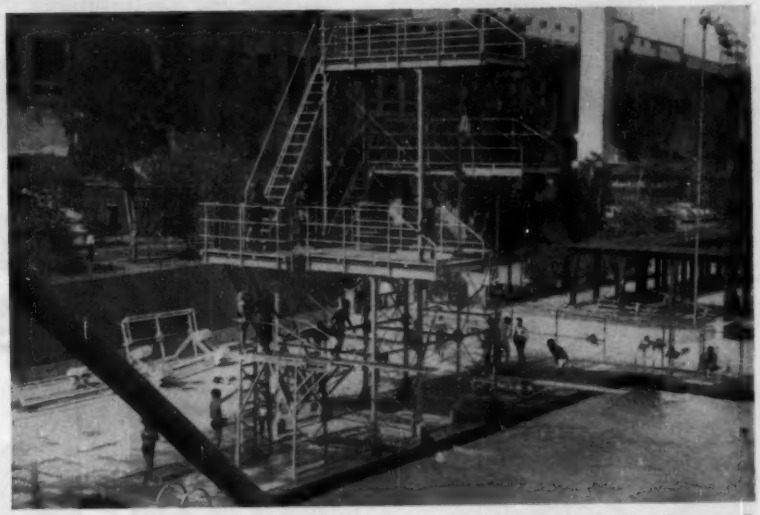
A11DL-U2—flashing beacon with down-light. 2" post mounting.

SOUTHERN Signals INC.

222 BEACH STREET • BOX 1303 • SHREVEPORT, LOUISIANA

Diving Boards

By C. P. L. NICHOLLS
Supervisor of Aquatics
Los Angeles Recreation and Park Department
Los Angeles, Calif.



The Olympic Swimming Stadium in Los Angeles which has been the "kindergarten" where great divers have been developed, contains the official diving equipment.

THE MOST TROUBLESOME ITEM of equipment in the swimming pool is the diving board. As the author has been fighting the diving-board problem for the past 25 years, with 32 pools to equip, the solution may be of interest to other municipal swimming officials.

Diving Boards We Have Tried

In the past, when planning our annual budget for diving boards, we estimated that at least two diving boards would be destroyed at each of our 32 pools. These estimates have undergone a radical change. The Aquatics Division of the Recreation and Park Department has had opportunity to test diving equipment down through the years. We list here some of the diving boards we have tried:

First: A straight-grained varnished wood board with cocoa matting. The best of these differed in spring action and soon became soggy and warped, then cracked and eventually fell apart at the fulcrum.

Second: Then there was the laminated wood board that was glued, bolted and cleated together and fitted with the usual infection-harboring cocoa matting. This Division made its own boards of this type. They, too, would warp and break and had little spring, if any. These lasted the longest.

Third: The wood board covered with plastic or glass cloth was claimed to be water impervious, protecting the wood from deterioration. However, this glass covering soon cracked and peeled away, exposing the common wood board enclosed to the usual effects of moisture. Also, our divers turned this board down because its plastic covering killed the spring of the board. It was altogether too "stiff" and broke at the fulcrum, as all wood boards do.

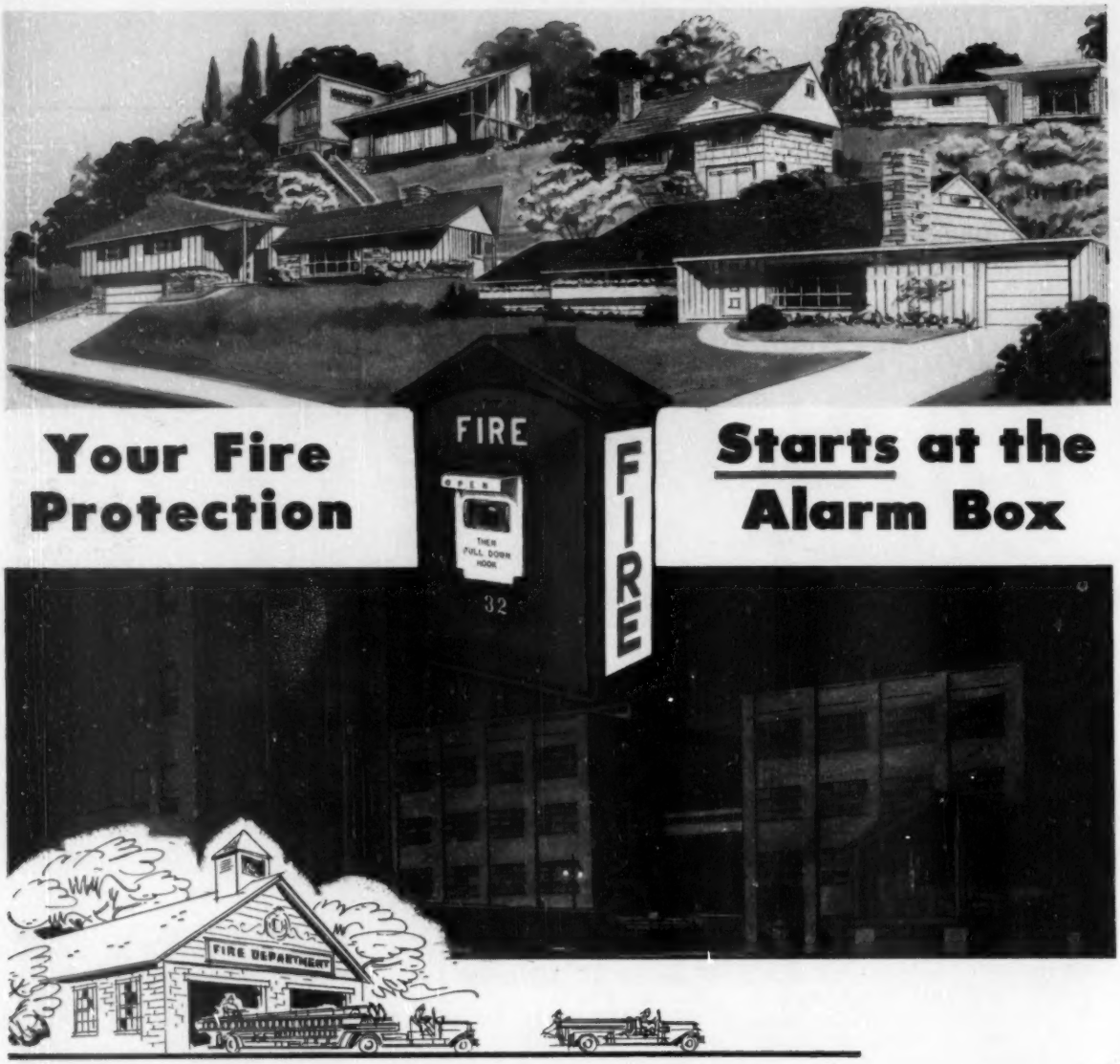
Advantages of Aluminum Boards

Six years ago we were asked to test an aluminum diving board and found that its bonded nonskid surface eliminated cocoa matting with the hazard of contracting athlete's foot from the boards.

The Norman Buck Manufacturing Company of Seattle had sold a number of the aluminum spring-boards in the Los Angeles area and the divers found that they felt at home on the aluminum board wherever they found one. The spring was alike, because they were made of metal and the construction was consistently similar. Today, we have 33 aluminum boards installed throughout the Los Angeles municipal pools, and our wooden boards are a thing of the past. The aluminum spring-board, constructed of aircraft extrusions, has been accepted by the AAU and NCAA, as well as for Olympic competition.

Another distinct advantage of the aluminum board is the obvious economy, due to the service rendered by the manufacturer. When wood boards cracked or broke, the destruction was complete. If one of our aluminum boards becomes damaged, it can be restored to new condition at slight cost by repairing the damaged component.

Potential diving champions practice their art on the Stadium's 3-meter board.



Your Fire Protection Starts at the Alarm Box

Day and Night, every hour of every day, your Municipal Fire Alarm System is ready to put trained men and equipment into *immediate action.*

There are no delays, no mixed-up instructions, when the Fire Alarm Box is used. *Yet the community's yearly cost for this dependable service is usually less than 75¢ per person.*

Our new booklet, "The Economy of a Fire Alarm System" will give you interesting information about this subject and its importance to your community. For your copy, just return the coupon. There is no obligation.

GAMEWELL®

THE BOX IS POSITIVE

Reduces Human Error

THERE IS NO SUBSTITUTE FOR THE FIRE ALARM BOX SYSTEM

THE GAMEWELL COMPANY, DEPT. FE
NEWTON UPPER FALLS 64, MASS.

Please send my copy of "The Economy of a Fire Alarm System," at no obligation.

Name..... *Title*.....
(Please Print)

Address.....

.....

City..... *Zone*..... *State*.....

Public Safety

Has Your Town an Outboard Motor Rescue Boat?

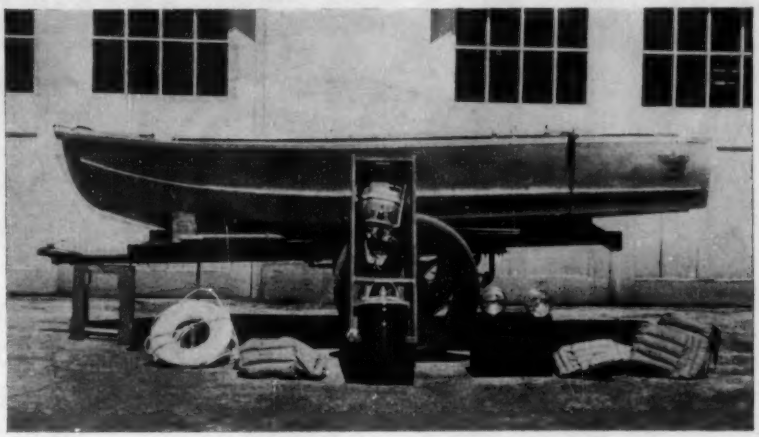
WHEREVER there is a body of water someone who can't swim will sooner or later get too far from shore. This calls for rescue — or search. When the call comes, it is well to have a boat and an experienced crew ready to answer the emergency.

An increasing number of towns are providing themselves with the facilities for search and rescue on streams, lakes, and bays. The boat doesn't have to be large or expensive, but it should be fast, maneuverable and reliable.

Milo, Maine, for example, purchased and assembled a rescue unit to meet the emergencies of spring floods in the Piscataquis River. Town officials believe the unit will be useful most of the year. It is an aluminum boat powered by a 7½-hp Evinrude motor, and carries life preservers, grapples, and a generator-powered underwater searchlight. Members of the fire department have taken a refresher course in search and rescue operations.

New Motor Starts Like an Automobile

Larger municipalities with greater water areas and hazards use additional units and larger rescue boats requiring appropriate power. Evinrude Motors of Milwaukee, Wis., announces a new 25-hp outboard motor with a built-in electric starter. Instead of a starter cord, a pushbutton on the dash operates an auto-type starter using an Auto-Lite Sta-ful battery that needs water only three times a year and gives up to 800 starts without charging. A standard feature of the motor is jack-rabbit acceleration and smooth performance at all speeds from slow to a maximum of 30 mph.



An Evinrude 7.5 hp outboard motor powers this aluminum search-and-rescue unit.

Fire-Alarm Box "Talked" in Pasadena, Calif.

AS an educational measure in our fire-prevention work, we recently employed a stunt first used, as far as we know, at the Boston convention of the International Association of Fire Chiefs in 1952. In a regulation fire-alarm box shell we mounted a two-way dynamic amplifier. This unit is connected with a unit speaker and microphone located at a spot where the operator can have a clear view of the box and pedestrian traffic, while he personally is out of sight.

The box was kept in one location and operated for an hour or two at least twice a day at times when pedestrian traffic was heaviest. It was effective to have one or two fire inspectors, in uniform, with pamphlets in the vicinity of the box. The talker gave brief fire-prevention messages, and often engaged passers-by in conversation. This was especially effective with children. He would talk to them and get them to ask their parents questions.

S. H. Edmondson, *Chief*
Fire Department
Pasadena, Calif.

Phoenix Buys a Pumping Engine

THE City of Phoenix, Ariz., has purchased a 1,250-gpm American-LaFrance pumping engine for installation in new Fire Station No. 11, built at a cost of $64,000. Seven manufacturers submitted nine bids on a 1,250-gallon engine and nine bids on a 1,000-gallon engine. American-LaFrance was low bidder at $21,235, according to City Purchasing Agent E. E. Udall.

Special School Traffic Police Sworn In

City clerk Marie W. Clark, of Livonia, Mich., swears in the first contingent of 13 special school traffic police and nine alternates who will supervise major crossings in the city as children go to-and-from school. Observing the city hall ceremony is Patrolman Robert C. Baumgartner (right), who is in charge of the special police.

MODERN HORTON STANDPIPE

BOOSTS DISTRIBUTION PRESSURES AT CLEARWATER

To help meet the heavy seasonal demands placed on its municipal water system, the city of Clearwater, Florida installed the 1,000-000-gallon Horton® standpipe shown at the left.

The results—minimum distribution pressures in the system were raised 100 per cent and pressure variations were reduced to a normal fluctuation.

If your municipal water system is suffering from inadequate pressures and undue pressure variations, you can solve the problem with a Horton reservoir or a Horton elevated tank of the proper size. Write our nearest office for complete details. There is no obligation on your part.

Write for your copy of our bulletin, Horton Steel Reservoirs and Standpipes.

HORTON

WELDED STEEL

STORAGE TANKS

CHICAGO BRIDGE & IRON COMPANY

Plants in Birmingham, Chicago, Salt Lake City, and Greenville, Pa.

Atlanta 3	2114 Healey Bldg.	Los Angeles 17	1503 General Petroleum Bldg.
Birmingham 1	1502 North Fiftieth St.	New York 6	3308—165 Broadway Bldg.
Boston 10	1002—201 Devonshire St.	Philadelphia 3	1616—1700 Walnut Street Bldg.
Chicago 4	2127 McCormick Bldg	Pittsburgh 19	3202 Alcoa Bldg.
Cleveland 15	2236 Midland Bldg.	Salt Lake City 4	501 West 17th South St.
Detroit 26	1501 Lafayette Bldg.	San Francisco 4	1533—200 Bush St.
Havana	402 Abreu Bldg.	Seattle 1	1301 Henry Bldg.
Houston 2	2101 C & I Life Bldg.	Tulsa 3	1625 Hunt Bldg.

A Way Out of a Water Shortage

NEIGHBORHOOD cooling towers, or spray ponds, were proposed as a way out of the coming water shortage induced by home air conditioners, by M. M. Lawler, vice-president of the Worthington Corporation, at a recent meeting of New Jersey water-works officials.

Mr. Lawler suggested locating the spray pond in a recreational park area. The water could be treated to inhibit corrosion and the system drained during the winter. During the hottest weather, only one-tenth of the water normally required for these air conditioners would have to be purchased from the local water departments.

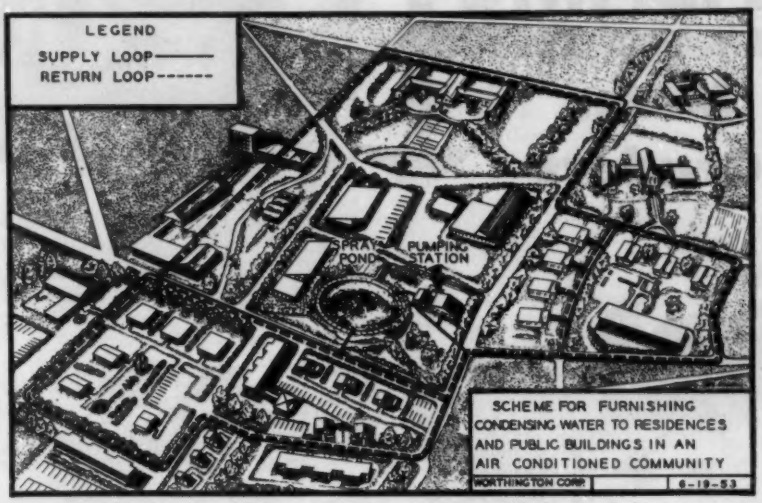
The average family of four can be expected to use between 3,000 and 4,000 cubic feet of water per quarter, exclusive of air conditioning. During the three-month period of July to September, this same family will require an additional 35,000 to 45,000 cubic feet of water, should it use a 3-ton air conditioner operated with a water-cooled condenser that requires 1½ gallons of cooling water per ton. Water-supply facilities would, however, have to be 10 to 12 times as large if all homes are air conditioned.

Rather than have the nearest municipality furnish all the water, the architect and the builder could design and install their own recirculating water system by placing piping under the streets along with the sanitary water-supply piping. At some central point, designed as a recreational area, a pumping station and a large cooling tower, or spray pond, could be constructed.

Quite feasibly, Mr. Lawler concluded, the spray-pond area could be designed for ice skating in the winter.

New Water Rate Series

BEGINNING with the May issue, THE AMERICAN CITY begins its up-to-date review of water rates throughout the country. The report embraces modern developments, such as air conditioning, fluoridation, and billing procedures, among others. Accompanying the tabulated reports will be editorial discussion of factors involved in evolving a good municipal water rate.



A centrally located spray pond would serve to eliminate excessive peak water demands produced by air conditioners, and could also be used for ice skating in the winter.

Everybody Needs More Water

ONE OUT of every seven cities of 10,000 or more people in a poll of 500 cities had to restrict water use last summer. In half the cities, the reason was insufficient pumps, mains, and storage tanks. The need for revised planning, dramatized by this 1953 situation, was pointed out by Harry E. Jordan, secretary of the American Water Works Association, who addressed a meeting of the Florida Section recently.

According to Mr. Jordan, shortages were primarily due to need for new sources of supply, new distribution mains, and efficient equipment to meet peak demands. Approximately 20% of the cities need additional supply works; 12%, treatment works; 7%, raw-water pumps. Almost 50% of the cities cannot meet the demand of outlying areas and need more distribution mains.

"These weaknesses are serious," Mr. Jordan warned. "Management of water utilities has failed to analyze the problem of distribution."

This problem was emphasized by a letter to the editor of a Midwest paper, pointing out that it is reasonable to restrict water use when fires demand it, but, under normal conditions, it is unreasonable to ask a user to buy less water than he wants because the system is overloaded.

The magnitude of this problem has alarmed Mr. Jordan, who observed that estimates of city growth forecast that, by 1975, the average water system must be prepared to produce 142% of the quantity produced today. To meet peak demands at that time, water utilities will require 235% of their 1950 capacity. These figures are based on the record of the past 60 years, in which the per capita water demand has increased 1.6 times faster than the population.

"Alongside this demand for public supply, industry will probably increase its water use by 250% by 1975," Mr. Jordan reported. This means, in his opinion, that, in many areas, sharp competition will arise between cities and their industries for water that is available and can be developed.

"Restrictions on water use are an admission of defeat," Mr. Jordan asserted. Coupled with this problem is the pressing need to increase water rates, not only to pay for these needed expansions, but also to pay for current costs.

"The average citizen pays only 1½ cents per day per person for water service. Before World War II, it cost $75 per person to provide water service. Today, the cost is double or more. The public should recognize this change and be prepared to approve the 25 or 50% increase in water rates needed to maintain their water-system service," Mr. Jordan concluded.

ADAMS

Motor Graders

the most useful machines you can own for building and maintaining city streets

Adams Motor Graders are saving time and money for hundreds of cities and towns across the nation . . . building, rebuilding and maintaining streets and alleys—backfilling over sewers, water mains and gas pipes—leveling parking areas, playgrounds, parks, etc. In winter these same high-performing machines clear streets of snow and ice with real speed and economy.

Adams Motor Graders are available in several popular sizes —and all offer the important advantages listed in panel. Ask your local Adams dealer for full information on these machines of many applications.

ONLY ADAMS OFFERS ALL THESE OUTSTANDING ADVANTAGES

- 8 Overlapping Forward Speeds
- High-Arch Front Axle for Clearance
- Push-Button Starting from Cab
- Positive Mechanical Controls
- Wide Range of Blade Adjustments
- Exceptional Blade Clearance in All Operating Positions
- Balanced Weight Distribution
- Easy Access for Fast Servicing
- World-Wide Dealer Service

J. D. ADAMS MANUFACTURING CO., INDIANAPOLIS, INDIANA

Make your next motor grader an ADAMS

Street Construction & Maintenance

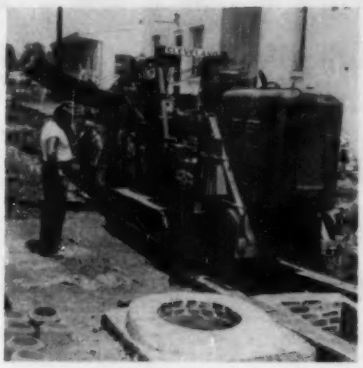
Traffic Relief For Lancaster

LANCASTER, PA., needed help badly. This thrifty Pennsylvania Dutch community of 65,000 was the center of an intersecting group of highways converging on the city from a dozen different directions. The traffic generated by the business, commerce, and industry within the city itself was enough to create a problem. But the additional load thrust on the city's street system by these converging highways made the traffic congestion dangerous, both to the city and to motorists who wanted only to proceed through the city to other destinations.

This problem has now been corrected by the construction of a dual concrete highway that bypasses Lancaster. The highway is a limited access road, known locally as Lititz Pike, which has many unusual construction features.

Fill material was taken from a nearby farm. However, the rich topsoil was first bulldozed to one side so that only the clay and stone went into the embankment. The soil was then returned and the value of the farm was unimpaired.

In other areas, drainage presented a problem, especially near suburban areas. In many of these places, a Cleveland Model 95 trencher excavated ditches for the placing of 24,000 linear feet of 6-inch vitrified clay underdrain.



A Cleveland trencher opens ditches for placing of drain tile along Lititz Pike.

Results of Asphalt-Surface Test

HOW MUCH cover aggregate should be placed on what type of asphalt for best results is a subject that has received the concentrated attention of the Texas Engineering Experiment Station. Research Engineers Fred J. Benson and Bob M. Galloway confined their experiments to two aggregates and four types of asphaltic materials commonly used in Texas and not infrequently used elsewhere.

The proper quantity of aggregate for a one-course surface treatment, the researchers found, is the quantity required to cover a square yard one stone thick, plus an allowance of 10% for spreading inaccuracies.

The proper amount of asphalt to be used can be determined by the Kearby method which uses the imbedment desired as a controlling factor.

Aggregate grading, they discovered, is very important, too. Cover stone with a limited variation in grading will give the highest retention for a given quantity applied.

Both moisture content and dust affect retention. However, if wet stone is permitted to dry before being rolled, reasonably good retention will result. Also, wetting dusty aggregates before application and allowing them to dry before rolling reduces the effect of dust. For a given quantity of applied aggregate, the retention increases with an increase in asphaltic material used.

Temperature is an important factor. Limited studies indicate that heating the stone to 150°-200° F. would increase retention for a given quantity of stone and asphalt applied.

The report is entitled, *Retention of Cover Stone by Asphalt Surface Treatment*. Single copies can be obtained free of charge by writing to the Texas Engineering Experiment Station, College Station, Texas.

From Clearing Snow To Loading Slag

Canton, Ohio, bought this Adams Traveloader to help clear snow from streets, but uses it, to good advantage the rest of the year. Here it loads fine slag to be used for street-improvement work.

"Before I saw an American Meter, I never thought a water meter would be so simple"

"I'll admit I was pretty skeptical when the Buffalo Meter Co. representative wanted to take an American Meter apart on my desk.

But he disassembled it, put it together and then let me do it. It took only a minute!

I'd never seen a water meter so simple, with so few parts, such easy assembly.

"We placed our first order after I found out that parts are completely interchangeable on brand-new meters or ones thirty years old. When I think of the savings we'll make in repairs alone, I'm sorry we didn't install AMERICAN METERS years ago."

• Full information available upon request.

BUFFALO METER CO.

2902 Main Street, Buffalo 14, N. Y.

Street Cleaning & Refuse Disposal

300 Per Cent Bigger Pay Load

Cedar Rapids, Iowa, uses covered, compactor trucks to collect more refuse with less truck mileage

A FIVE-YEAR replacement program in the Cedar Rapids sanitation department has resulted in a complete change from open-bodied garbage trucks to larger, covered-type refuse carriers. The modernized fleet of 11 vehicles has enabled coverage in this city of 75,000 to increase by 20% since 1948. At the same time, it has done away with odorous, ugly, unsanitary trucks which were offensive to citizens. Ten such trucks are now put into service each day; one remains in reserve.

Old System

Before the replacement program, 13 open-bodied trucks handled all of Cedar Rapids' garbage pickups. They were covered with a tarpaulin only after the trucks were loaded and ready to leave the collection route for the disposal point. Not only was that system objectionable to the public eye and nose, it had many shortcomings from the standpoint of sanitation. During this time also, a postwar homebuilding boom in Cedar Rapids necessitated the expansion of municipal garbage-collection service, requiring the use of more vehicles to do the job.

So a survey of available equipment was made. Factors considered were load capacity, watertightness, cover for loads, ease of loading and dumping, maneuverability, cost of maintenance and purchase. When sufficient information had been assembled, it was decided that a 9-yard Heil Colecto-Pak body would best serve our needs.

The first packer body consequently went into service in March 1949, and a careful check was made to certify its value. The study showed that refuse loads in the covered carrier were three times heavier, on the average, than the loads of open-bodied units. The draining of offensive garbage juices to the streets had been curtailed, too. Above all, obnoxious odors were eliminated since the truck's unsightly load remained under cover at all times.

Replacement Program

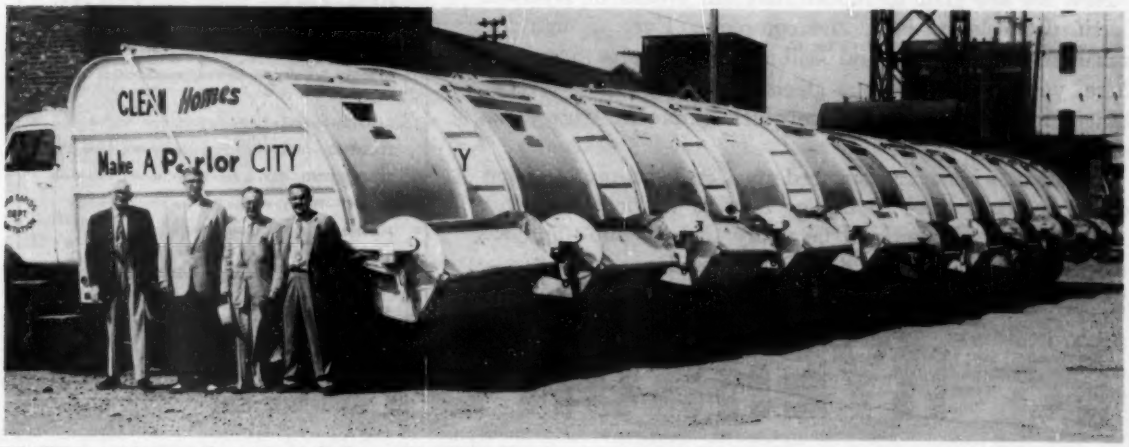
All these factors determined our decision to standardize on the particular truck body being tested. Three additional units were purchased in 1950, two more in 1951, and another two in 1952. The final three vehicles were added in 1953, bringing the fleet to a total of 11 trucks with Colecto-Pak bodies. The last three were purchased second hand—at a savings of $10,000 over new equipment—from a private collector who was forced out of business because of the new state law prohibiting the feeding of uncooked garbage to hogs. The acquisition of these used units stepped up the replacement program by two years.

Cost of New Units

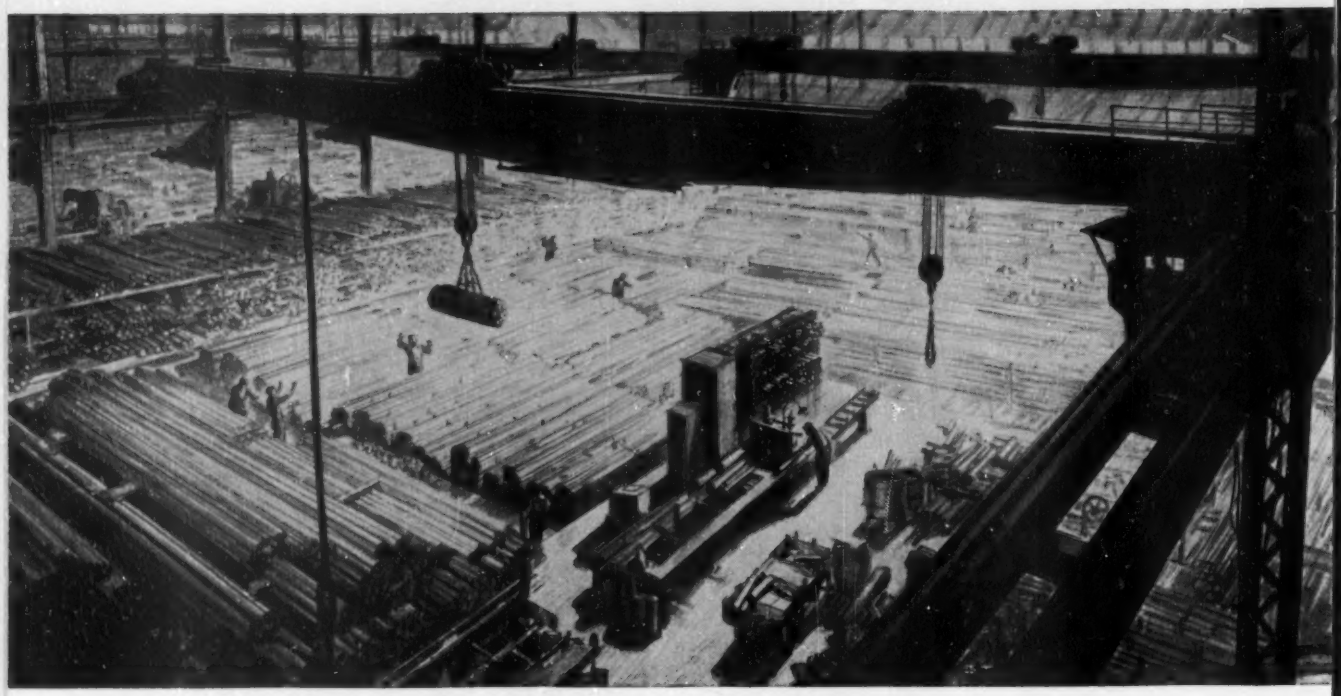
The total cost of the 11 units has amounted to $49,943.85. The department will have no need for body replacement for at least ten years. However, a chassis-replacement program is planned for 1955.

Because of the use of this packer-type body, the average of miles traveled has dropped from 6,986 miles per month in 1948 to 5,507 miles per month in 1953. The number of trips has been reduced from 775 per month in 1948 to 446 in 1953. At the same time, the pay load has jumped from 569 tons per month in 1948 to 788 tons in 1953. Based on these comparisons, it is felt that the replacement program was a sound move.

CARL D. SMITH
Assistant Health Officer
Cedar Rapids, Iowa



This line-up of improved equipment looks good to Cedar Rapids city officials. They are (left to right): Commissioner of Finance L. D. Burgus; Assistant Health Officer Carl D. Smith; Mayor Milo J. Sedlacek; and L. Shoemaker, of the Heil Company.



steel stocks...
...again complete!

For years, as you well know, the demand for steel has exceeded the supply. So while we have been able to furnish many thousands of tons from our stocks, all kinds and sizes have not always been available.

Now we are glad to report that our stocks of Ryerson Certified Steels are large and complete. Even though the continuing strong demand still depletes a size here and there, you will find carbon steels, alloys, stainless—everything you need—on hand for quick shipment from your nearby Ryerson plant.

So call us whenever you need steel or have any question regarding what steel to use or how to fabricate it. Our experienced steel men will be ready to help you—and we can promise you prompt, dependable service.

PRINCIPAL PRODUCTS

CARBON STEEL BARS—Hot rolled & cold finished

STRUCTURALS—Channels, angles, beams, etc.

PLATES—Many types including Inland 4-Way Safety Plate

SHEETS—Hot & cold rolled, many types & coatings

TUBING—Seamless & welded, mechanical & boiler tubes

ALLOYS—Hot rolled, cold finished, heat treated

STAINLESS—Allegheny bars, plates, sheets, tubes, etc.

REINFORCING—Bars & Accessories, spirals, wire mesh

BABBITT—Five types, also Ryertex plastic bearings

MACHINERY & TOOLS—For metal fabrication

RYERSON STEEL

JOSEPH T. RYERSON & SON, INC. PLANTS AT: NEW YORK • BOSTON • PHILADELPHIA • CINCINNATI • CLEVELAND • DETROIT
PITTSBURGH • BUFFALO • CHICAGO • MILWAUKEE • ST. LOUIS • LOS ANGELES • SAN FRANCISCO • SPOKANE • SEATTLE

Get What You Want—No Charge!

Please check the list of interesting free catalogs on this and following pages. To obtain the literature you want, write or wire directly to the manufacturers at the addresses given. If you prefer, you may circle the identifying number on this coupon and mail to THE AMERICAN CITY, *470 Fourth Ave., New York 16, N. Y., and we will see that catalogs are sent to you without expense or obligation.* 4/54

169		170		171		172		173		174		175		176		177		178
	179		180		181		182		183		184		185		186		187	
188		189		190		191		192		193		194		195		196		197
	198		199		200		201		202		203		204		205		206	
207		208		209		210		211		212		213		214		215		216
	217		218		219		220		221		222		223		224		225	
226		227		228		229		230		231		232		233		234		235

Name ..... **Position** .....

Address .....

Stop Rust

169 Protect water tanks, street lights, parking meters, water- and sewage-plant equipment and other metal surfaces with Rust-Oleum, a long-lasting rust preventive, available in a variety of colors. Quickly applied with a long-nap lamb's-wool roller, Rust-Oleum cuts wire fence recoating costs. The paint effectively resists salt water, salt air, heat, sun and fumes. It is fully described in literature from the RUST-OLEUM CORP., 2514 OAKTON ST., EVANSTON, ILL.

Cut Your Sweeping Cost 75%

170 The Wilshire Municipal Power Sweeper, Model 1000-S, is furnishing large and small municipalities with a practical, economical answer to the problem of maintaining cleaner, more sanitary streets under today's traffic conditions. This same company offers other models for sidewalks, parks and parking areas. Write for literature to Ben Heer, General Sales Manager, the WILSHIRE POWER SWEEPER CO., 526 W. CHEVY CHASE DR., GLENDALE 4, CALIF.

New Street-Lighting Pole Facilitates Maintenance

171 Mounted on Thompson Servisafe metal pole units, street-lighting luminaires are easily lowered for low-cost maintenance at ground level by a patented disconnecting and lowering mechanism. No ladders, scaffolding, or lifts are needed, and electrical dangers are completely eliminated. The metal poles are attractive and assure peak lighting efficiency. Get *Catalog PB-53* from THE THOMPSON ELECTRIC CO., 1120 POWER AVE., CLEVELAND 14, OHIO.

Photocopy Your City's Records

172 Municipal departments can save the costs of retyping, hand copying and checking by copying important records, letters and instructions with this new electric photocopying machine. The Apeco Systematic Auto-Stat prints, processes and dries automatically. Printing on one or two sides, it makes black and white or colored copies from any original up to 11 x 17 inches. For a free copy of the new Photocopy Information Kit write AMERICAN PHOTOCOPY EQUIPMENT CO., 1937 W. PETERSON, CHICAGO 26, ILL.

Sewage Treatment for The Small Community

173 Provide your community with a low-cost, easy-to-operate sewage-treatment plant that combines the simplicity of an Imhoff tank with added flexibility and control. The Lakeside Spiragester incorporates a Lakeside Spiro-flo Clarifier over a digestion tank. It is fully described in *Bulletin 124*, available from LAKESIDE ENGINEERING CORP., 222 W. ADAMS ST., CHICAGO 6, ILL.

Light Hauling Made Easier

174 A quick, simple way for communities to handle their many light hauling jobs is to use the new 780 Shaft-Drive Truckster with three speeds forward, and one reverse. Easy-to-handle, the unit hauls up to 500 pounds, operating for less than 1 cent a mile. It is made by CUSHMAN MOTOR WORKS, INC., 961 N. 21st ST., LINCOLN, NEBR.

Meets Every Sewer-Cleaning Problem

175 Your sewers may be filled with sediment, clogged with grease, or obstructed with roots, brickbats or baby carriages; whatever your sewer-cleaning problem, a Turbine machine will do the job. This sturdy sewer-cleaning unit is discussed in a new catalog, available with prices and specifications from TURBINE SEWER MACHINE CO., DIV. of CHARLES H. STEHLING CO., 1303 N. 4th ST., MILWAUKEE 12, WIS.

Better Sand and Gravel For Water Filters

176 The NORTHERN GRAVEL CO., P. O. BOX NO. 307, MUSCATINE, IOWA, produces its water-filter sand and gravel from an inland pit where it is free from river contamination and foreign matter. The company will ship this sand and gravel in bulk or bagged to any water-filter plant in the country. Write for details.

Tax Equalization Appraisals

177 A company experienced in producing high quality appraisals for tax equalization purposes for the past 15 years, offers you a client list and brochure on request. Write COLE-LAYER-TRUMBLE CO., 11 W. MONUMENT AVE., DAYTON 2, OHIO.

Vertical Parking Conserves Space

178 With the increasing shortage of parking space in urban communities throughout the nation, the vertical garage may be profitably utilized. CHARLES W. LERCH & ASSOC., 1172 BOARD OF TRADE BLDG., CHICAGO 4, ILL., will furnish a new booklet detailing the advantages of the various types of vertical garages, together with their cost and the number of cars accommodated by each. Write for your copy of *Auto Parking*.

Faster Way to Fasten Street Signs

179 Using the Steelbinder method you can fasten new street signs securely in less time. Steelbinder offers strapping in stainless or galvanized steel, aluminum and other strap types to fill every sign strapping requirement. Also available are such sign-attaching accessories as brackets, extension arms, bolts and seals in stainless and galvanized finishes. For a new *Street Sign* brochure, write A. J. GERRARD & CO., 1950 HAWTHORNE AVE., MELROSE PARK, ILL.

Protects Steel Water Pipe

180 Protect the interior surfaces of steel water pipe with Bitumastic 70-B, a durable enamel that prevents rust, corrosion, incrustation and tuberculation. Lined and coated with this enamel, steel pipelines retain their high flow capacity, eliminating the need for oversized pipe. In addition, Bitumastic 70-B can be applied to protect the exterior of the pipe against corrosive action of the soil. Request literature from KOPPERS CO., INC., TAR PRODUCTS DIV., DEPT. 224T, PITTSBURGH 19, PA.

Clocks Speeding Motorists

181 Reduce the number of police officers assigned to traffic-control duty in your community with Speed Watch, a new electrical timing system that clocks speeding motorists. Only one police officer is needed to set up and operate this portable unit, releasing the spare man for other duties. Furthermore, Speed Watch will reduce excessive speeding, making your community a safer place to travel in. For complete literature, write TRAFFIC HOUSE, INC., P. O. BOX 201, MARSHALL, MICH.

(Please turn to page 31 for more Bulletins)

this dozer has all the angles!

This hydraulic angling blade is a great time saver. It angles to either side by hydraulic control from the tractor seat. Other blade attachments include—stationary angling blade, manually controlled angling blade, snow plow and hydraulic tilt blade.

An efficient front-end loader is another attachment that makes the tractor-dozer even more profitable. It attaches quickly and easily to a stationary mounting frame. Uses the same hydraulic system and control as the dozer.

When it comes to figuring ways to cut costs and speed work, the Oliver "OC-3" tractor-dozer has all the angles. Why? Well, for one thing it's compact and turns on a dime. You get into places you can't reach with a larger machine...do many jobs formerly done by hand.

You have a choice of blades and a front-end loader for all types of work. Another thing, finger-tip hydraulic control gives you the down pressure and accurate adjustment you need to do a fast, clean job. And, you get the power and traction to work in any weather, any ground condition.

Here's another angle that's worth figuring—takes only a light trailer or truck to move the "OC-3" tractor-dozer from job to job. The fast, easy transport of this unit puts you in line for more work at distant points. Why not check this rugged, economical team for your work? A call or visit to your Oliver Industrial Distributor will put the tractor-dozer on your site for a demonstration.

THE OLIVER CORPORATION

400 West Madison Street, Chicago 6, Illinois

A complete line of industrial wheel and crawler tractors.

Which Catalogs Interest You?

Write directly to the manufacturers or use the coupon on page 29

Spaces Cars at Public Parking Lots

182 Assure efficient parking in public lots by installing Har-Bar Barriers with saddles that are placed at 8 ft. intervals for proper car spacing. These barriers are high enough to stop a car, yet, sufficiently low to clear bumper guards. Installed above ground on any surface, the wood won't rot, and drainage problems are avoided. For complete details on these low-cost, easy-to-maintain units, write HARRIS BARRIER, INC., 5407 N. PENNSYLVANIA, INDIANAPOLIS 5, IND.

Steel Swimming Pools

183 Lower the maintenance cost of municipal swimming pools by installing leak-proof, steel units that only require an occasional coat of paint. Koven steel pools are available in a variety of sizes, styles and designs, in indoor and outdoor models. Address KOVEN STEEL SWIMMING POOLS, INC., 154 OGDEN AVE., JERSEY CITY 7, N. J.

Marks Traffic Lines In Less Time

184 Reduce traffic tie-ups when marking city streets by using an inexpensive reflective striping material that is quick to apply and equally fast to dry. Long-wearing, Prismo's Municipal Life-Line results in reduced labor and material costs. It is fully described in literature from PRISMO SAFETY CORP., HUNTINGDON, PA.

Inaccessible Water Pipe Gets Added Protection

185 Water pipe installed under busy streets, highways, railroad tracks and other spots where it is not readily accessible in case of emergency, requires extra protection. You can get this protection by reinforcing hard-to-get-at pipe joints with Clow mechanical-joint bell-split sleeves. These sleeves are simple to install without lead, jute or calking. They are discussed at length in an illustrated circular from JAMES B. CLOW & SONS, 201-299 N. TALMAN AVE., CHICAGO 80, ILL.

Facilitates Park Maintenance

186 A good, fast-cutting lawn mower for the parks in your community is the new Model "72" Power-Take-Off Rotary Mower, made by the WORTHINGTON MOWER CO., STROUDSBURG, PA. This twin-blade unit can be used with the Worthington Model "G" Tractor, or with other 2-plow tractors that feature power-take-off drive. Cutting blades are staggered for full, even cutting. Further details and specifications are available in *Bulletin W-114.*

Motorcycles Help Control Peak Traffic

187 Get the tight traffic control needed for spring and summer's vacationing motorists by utilizing Harley-Davidson motorcycles. These sturdy, easily maneuvered vehicles enable motorcycle officers to apprehend traffic violators quickly. They are fully described in *More Effective Police Power,* an illustrated booklet from HARLEY-DAVIDSON MOTOR CO., MILWAUKEE 1, WIS.

Small Air Compressor With High Efficiency

188 A small size unit, the Model 120-P air compressor is, nevertheless, able to operate two 80-pound paving breakers, two 80-pound sheeting drivers, a 50-pound rock drill, four backfill tampers, or two concrete vibrators. It is powered by a heavy-duty Chrysler Model 22 Industrial engine, and designed with a minimum of fittings and gaskets. For additional data, write GORDON SMITH & CO., INC., 425 COLLEGE ST., BOWLING GREEN, KY.

Expansion Joints That Don't Bulge

189 Complete specifications and also a short form specification for Flexcell, the bituminous fibre expansion joint filler, are available. Complying with all the standard technical requirements, Flexcell has been used for years by street departments, and county and state highway departments. Write for this data sheet about Flexcell to THE CELOTEX CORP., 120 S. LaSALLE ST., CHICAGO 3, ILL.

Better Job of Street Paving

190 A tow-type paver that will spread anything from the stone base to the finished asphalt top course is recommended for street construction and maintenance. It features a powered breaker bar in the hopper for better compaction, an oscillating-toothed cutter bar that cuts the course off at the right thickness, and a removable trailer hitch for lifting and towing. Additional data on the Adnun Jr., will be furnished by the BLAW-KNOX CO., FOOTE CONSTRUCTION EQUIPMENT DIV., 1904 STATE ST., NUNDA, N. Y.

Reflectorized Signs Guide Traffic Safely

191 Grotelite SS, a reflective, smooth surface, flexible sheeting provides traffic signs with long-range visibility 24 hours a day. Easy-to-apply, the smooth, self-cleaning surface may be cleaned, sprayed or brushed. A complete description, samples and prices will be sent by THE GROTE MFG. CO., GROTE SQUARE, BELLEVUE, KY.

Electric Photometer for Water Analysis

192 Municipal water treatment plants are offered complete information on the Klett Summerson Electric Photometer, a new device that may be used for any determination in which color and turbidity can be developed in proportion to the substance to be determined. Write KLETT MFG. CO., 179 E. 87th ST., NEW YORK, N. Y.

Dryer Saves Fire Hose

193 Lengthen the service life of fire hose by drying it with this new air conditioning dryer made by THE CIRCUL-AIR CORP., 575 E. MILWAUKEE, DETROIT 2, MICH. Electrically operated, Circul-Air circulates prewarmed fresh air through coiled wet hose at the rate of 5 to 6 air changes per minute. Easy-to-use, it is fully described in a new catalog available from the manufacturer.

How Sanitary Landfill Benefits Minot, N. D.

194 A sanitary landfill project at Minot, N. D., is providing that community with two important benefits. Unsanitary open dump refuse disposal has been eliminated, and the rubbish will be used to build the right of way for the possible relocation of U. S. Highway 52. Minot's entire landfill operation is performed by a combination International TD-14A and Drott Bullclam. This unit prepares the site, crushes and compacts refuse, transports and spreads earth cover, and grades and levels the finished area. For details on this "one-man sanitation squad," write DROTT MFG. CO., MILWAUKEE 8, WIS., or INTERNATIONAL HARVESTER CO., CHICAGO 1, ILL.

New Loader Does Many City Jobs

195 Installed on a 1½- to 2½-ton dump truck, this versatile Holmes-Owen loader permits the truck driver to load, haul and dump without using additional equipment. He can lift ½-yd. of materials in a single bucketful, loading the average truck in four minutes. In addition he can use the loader for light digging, grading and cleaning up. Get literature from the ERNEST HOLMES CO., CHATTANOOGA, TENN.

Saws Concrete for Low-Cost Street Repairs

196 Saw repair patches — water, gas, sewer and air-line trenches in streets, walks and highways with a concrete saw that will save you up to 50% in labor and material, advises the CLIPPER MFG. CO., 2813 S. W. WARWICK, KANSAS CITY 8, MO. The Clipper Consaw features 3-point suspension which holds the blade straight in the cut, eliminating binding, drifting, sidewear and friction. It saws contraction joints quickly, without hand forming or spalling. Write for details.

Electric Cables for Municipal Services

197 Here is a 16-page illustrated booklet on electrical cables especially for municipal services and addressed to the traffic engineer, the city electrician, fire alarm superintendent, and the city purchasing agent. In addition to conductors for traffic signals and fire-alarm boxes, there are also detailed discussions of series street-lighting cable, and airport-lighting cable. It is an instructive booklet available free from WIRE and CABLE DEPT., GENERAL ELECTRIC CO., BRIDGEPORT 2, CONN.

Legislative Developments of Interest to City Officials

198 A news service providing specialized information on state legislature is provided by BETHUNE JONES, RED BANK, N. J. Survey reports are furnished on current and prospective legislation, as well as special information on such subjects as air pollution, gasoline and other highway-user taxes, amusement taxes, housing and redevelopment, parking and traffic congestion and similar subjects. This news service offers a continuing general picture of various developments in the state capitals.

(Please turn to page 33 for more Bulletins)

Spring Rains Bring TURBIDITY

Ferric Salts have proven their ability to coagulate waters of widely varying turbidity. Spring rains bring about turbidity for those who must treat surface supplies. The use of Ferri-Floc will simplify the treatment of this high turbidity. Ferri-Floc is partially hydrated Ferric Sulphate that has the ability to convert these high turbidities without radical dosage changes.

TENNESSEE CORPORATION
Ferri-Floc
TC
FERRIC SULPHATE

Performance Is Proof—

A large filtration plant Superintendent has this to say:

For coagulation of high turbidity with a high pH we have found Ferric Sulphate to be superior in all cases and we would not hesitate to recommend it.

TENNESSEE TC CORPORATION
TENNESSEE CORPORATION
617-29 Grant Building, Atlanta, Georgia

FREE—Let us send you without cost our new booklet on economical and efficient coagulation. Just send a card or letter to Tennessee Corporation, Grant Building, Atlanta, Georgia.

Obtain this Literature Free of Charge!

Write directly to the manufacturers or use the coupon on page 29

Efficient Sewage Treatment

199 Bulkley-Dunton offers Colloidair Separators for packaged sewage and waste-water treatment in smaller communities. There are primary flotation clarifiers in sizes from 25 gpm to 2,000 gpm in steel, and to 6,000 gpm in tile or concrete; packaged trickling filters in standard and high-rate models; and a complete line of rotary vacuum filters. For full information address BULKLEY-DUNTON PROCESSES, INC., DEPT. O-1, 295 MADISON AVE., NEW YORK 17, N. Y.

Low-Cost Steel Poles For Street Lighting

200 The first mercury-vapor lamps in Baltimore, Md., are mounted on steel poles with 6, 8 or 10 foot mast arms for a maximum mounting height of 30 feet. The steel poles and arms for this outstanding installation of 20,000-lumen lamps were made for the Bureau of Mechanical-Electrical Services by the A & X STEEL PRODUCTS CO., 2825 ANNAPOLIS RD., BALTIMORE 7, MD. Write for complete information and prices.

Distinctive Warning Sign Protects Motorists

201 Too often motorists are given insufficient warning of impending street construction and repair work, causing costly traffic accidents. These could be avoided by using large, legible warning signs such as the Eastern "A" sign at danger points. Set in a wide base red angle-iron frame that won't blow over, the free-swinging sign is yellow with black standard or reflectorized lettering on both sides. It is made by EASTERN METAL of ELMIRA, INC., ELMIRA HEIGHTS 1, N. Y.

Control Valves For Water Supply

202 A really dependable automatic hydraulic control valve will avoid water shortage, surge, and unnecessary waste at your water plant. Such valves are made by ROSS VALVE MFG. CO. INC., 8 OAKWOOD AVE., TROY, N. Y. Included in the company's line are pressure-reducing valves, surge-relief or back-pressure valves and altitude valves.

Accessory Tools for Your Paving Breaker

203 Used for concrete breaking in everyday street repairs, the pneumatic tool is available with a variety of accessories including moil points, clay spades, asphalt cutters, carbide rock-drill bits and drill steel lines. These accessories are discussed and illustrated in *Folder No. T-11-3P*, a copy of which will be sent by BRUNNER & LAY, INC., 9300 KING ST., FRANKLIN PARK, ILL.

Fresh Air Stressed As Firemen's Lifeline

204 Guard the safety of firemen by supplying them with adequate breathing protection in the form of Scott Air-Paks. Easy-to-operate, the Air Pak goes on in seconds, furnishing cool, fresh air. It eliminates waste, permitting dependable operation for about 50c per hour. Address the SCOTT AVIATION CORP., 191 ERIE ST., LANCASTER, N. Y.

Detects Leaks in Water Pipe

205 Detect costly leaks in water pipe in their exact position with this portable, simple-to-operate leak detector, the Model L46. Complete with the latest electronic improvements, the new unit offers fast performance at less cost. It is made by THE GOLDAK CO., 1544 W. GLENOAKS BLVD., GLENDALE 1, CALIF.

New Portable Dryer Aids Street Repair

206 A new portable dryer transforms the H & B Moto-Patcher into an efficient hot-mix plant for all types of street patching. The dryer drum is 8 feet long and 30 inches in diameter, with a drying capacity up to 10 tons per hour. Aggregate may be fed by hand or directly from the truck by means of a small chute attached to the tail gate. Request *Bulletin MPD-53* from HETHERINGTON & BERNER INC., 737 KENTUCKY AVE., INDIANAPOLIS 7, IND.

Fast-Cutting Power Saw

207 Equipped with a precision-guided blade, this new gasoline-powered saw cuts through wood at a speed of 160 strokes per second. The lightweight unit is easy-to-handle when felling, bucking, limbing or trimming. It provides smooth, straight cuts at all angles. Get literature from the WRIGHT POWER SAW and TOOL CORP., 292 LONGBROOK AVE., STRATFORD, CONN.

Connects Water Pipe Quickly

208 A fast, simple way to make service connections on steel, cast-iron, and Transite water pipe, is to use Skinner malleable iron service saddles. They are available in ½- to 12-in. sizes, and are made by the M. B. SKINNER CO., SOUTH BEND 21, IND. Literature on Skinner service saddles, pipe clamps, bell joint clamps and split coupling clamps will be sent on request.

Lower Repair Costs With These Rollers

209 Using 26 of these 3-wheel rollers to construct and maintain its streets and highways, one large Eastern state reports an average yearly bill of only $19.61 for each unit. Designed by the BUFFALO-SPRINGFIELD ROLLER CO., SPRINGFIELD, OHIO, the heavy-duty roller features 4-speed transmission providing a continuous range of roller speeds from 1.1 to 5.0 mph, all at full engine power. Models are available for 5- to 15-ton weights. Write for *Bulletin S-60-50*.

Water Conditioning and Treatment

210 Municipal water works officials are offered *American Reactors*, a new bulletin describing Three-Stage Reactors for softening or clarifying surface waters, treating industrial waste water for re-use, and lime or lime-soda softening of hard water. These reactors may also be used in the dealkalization and coagulation of surface water as a pretreatment in ion exchange, and for removing silica from the water. Write the AMERICAN WATER SOFTENER CO., PHILADELPHIA, PA.

Easier Way to Join Steel Water Pipe

211 The less time and heavy equipment needed to join steel water pipe, the lower your installation costs, assures this company. Dresser couplings are designed for fast, easy joining regardless of weather or trench conditions. Since no heat is required, damage to the pipe lining is avoided, assuring sustained high flow-coefficients. Data on Dresser couplings are available from the DRESSER MFG. DIV., 69 FISHER AVE., BRADFORD, PA.

Accurate Meters Handle Two Parking Problems

212 Communities can use the same type parking meter, a Mark-Time "Hurricane," for both curb-side and off-street parking. The manually operated "Hurricane" is designed to perform in any weather. A special "magic-link" feature reduces maintenance costs. Learn more by writing M. H. RHODES, INC., HARTFORD 6, CONN.

New Loader Digs In While Standing Still

213 Loading with hydraulics, the Lessmann Loadall scoops up big loads of heavily-compacted soils, cinders and aggregate in five seconds while standing still. The loader features a 9-ft. dumping clearance and 52-in. reach. Low-cost, it is easy to handle and safe to operate. Write LESSMANN MFG. CO., 2008 EASTON BLVD., DES MOINES 4, IOWA.

New Incinerator Stoker Increases Plant Capacity

214 Burn up to 50% more refuse at your incinerator plant by installing an F & E Incinerator Stoker designed by FLYNN & EMRICH CO., 301 N. HOLLIDAY ST., BALTIMORE 2, MD. Facts about the F & E stoker, including how the unit cuts labor costs, are contained in new literature available on request.

Protection of Public Property

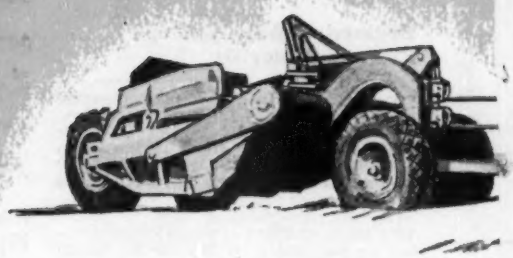
215 Realock fence has proven so effective in guarding public property against loss from burglary and vandalism, and in reducing pilferage losses, that lower insurance rates are possible. Installation of this fence eliminates the need for extra guards and cuts maintenance costs to a minimum. Get a new, descriptive catalog free from THE COLORADO FUEL & IRON CORP., DENVER, COLO.

Combats Algae in Public Swimming Pools

216 One way to win public good will is to provide your city with sanitary, inviting swimming pools filled with clear, sparkling water. A new pool algaecide, Exalgae, will help you maintain this clear water by removing all algae without irritating swimmers. Applied to the pool water in prescribed doses, Exalgae is available in both liquid and jelly forms. Write DEPT. B-1, INERTOL CO., INC., 480 FRELINGHUYSEN AVE., NEWARK 5, N. J.

(Please turn to page 36 for more Bulletins)

Announcing a $10,000 guarantee on used equipment!



Your Caterpillar Dealer now offers you a "BONDED BUY" on used Caterpillar-built equipment backed by a bond of $10,000. This bond is issued by The Travelers Indemnity Company. Your dealer *gives* you this protection when you purchase a "BONDED BUY" machine.

This is the *first* time in the heavy-duty machinery field that such an offer has ever been made!

And that's not all. You are also offered two other classes of used equipment buys—"Certified Buy" and "Buy and Try." These cover used equipment of *any* make.

What does this mean to you? First of all, *it takes the guess and gamble out of buying used equipment.* You know what you're getting. And your assurance is in writing!

What's more, *no matter what your needs, cost-wise or work-wise,* you have a *choice* of used equipment to meet them.

Only your *Caterpillar Dealer* offers you this across-the-board selection—"Bonded Buy," "Certified Buy" and "Buy and Try" used equipment. The best source of new machines, he's also your best source of used machines—tractors, engines, motor graders and earthmoving units.

Whether you're in the market for one machine, a few or many, he's the man to see for your *best* buy. See him today for complete details on guaranteed used machines!

Caterpillar Tractor Co., Peoria, Illinois, U.S.A.

CATERPILLAR

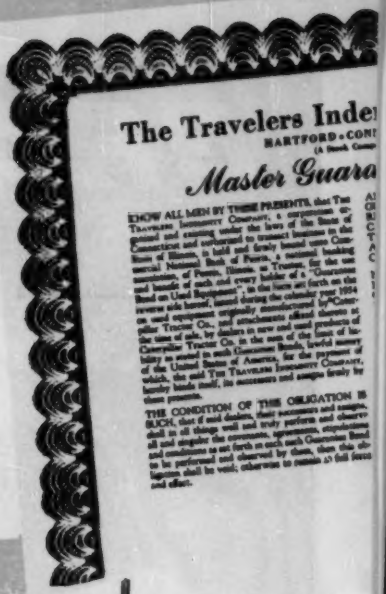
REG. U. S. PAT. OFF.

DIESEL ENGINES • TRACTORS • MOTOR GRADERS
EARTHMOVING EQUIPMENT

BEST BUYS IN NEW AND USED EQUIPMENT

Never before a guarantee like this!

Only your CATERPILLAR DEALER offers a "BONDED BUY" on used Caterpillar-built equipment backed by a bond of $10,000.


The Travelers Inde
HARTFORD • CONN
Master Guara

BONDED BUY

DON'T GUESS OR GAMBLE ON USED EQUIPMENT!

You KNOW what you're getting at your CATERPILLAR DEALER

Your Caterpillar Dealer offers you three clear-cut classes of used equipment. He backs each one in writing. You buy with confidence, sure that the equipment is honestly described. See him for the best used values on the market:

(1) **"BONDED BUY."** Only the best in used Caterpillar-built equipment. Each "BONDED BUY" machine is backed by a Dealer's Guarantee Bond equal to the purchase price of the machine up to a maximum of $10,000. This provides a guarantee for thirty days against unsatisfactory performance due to defective parts. If a part should prove defective within the guarantee period under the normal conditions of your job and with proper maintenance, your dealer will put your machine back into operating condition *with no charge to you for parts and labor* up to the amount of the bond. The Dealer's Guarantee Bond is backed by The Travelers Indemnity Company. Your Caterpillar Dealer gives you this protection with your purchase of a "BONDED BUY" machine. Look for the "BONDED BUY" symbol —it's your assurance of the best in used equipment.

(2) **"CERTIFIED BUY."** Next best buy in used equipment: "Certified Buy" covers machines of any make in good condition. Your performance guarantee is in writing backed by your Caterpillar Dealer.

(3) **"BUY AND TRY."** Bargains in used machines of any make. Buy and try them for a period mutually agreed upon by you and your Caterpillar Dealer. Each "Buy and Try" machine carries his written "money-back" agreement.

"BONDED BUY" ***assurance effective in the United States***

Copyright 1954, Caterpillar Tractor Co.

ONE GRAVELY TRACTOR
Powers 3 Mowing Tools!

Cut mowing costs—make only ONE investment in the power unit for ground maintenance tools. 5-HP Gravely gives you your choice—from 21 different tools—including three mowers!

REEL MOWER for fine lawns, quickly converted to 72″ Gang Mower by attaching Gang Units. Add Sulky, cover more ground faster with less fatigue. ROTARY MOWER for lawn and weed cutting . . . with optional LEAF MULCHER assembly. SICKLE MOWER for tough weed and brush cutting jobs!

And remember, with Gravely, you have *twice* the power of the usual power mower!

PLUS 3 SNOW REMOVAL TOOLS

Snowblower, Snowplow, and Power Brush attachments make snow removal fast and easy . . . you change from job to job by removing and replacing only four bolts . . . suit the tool to the job or season in minutes!

PROOF... BY FREE DEMONSTRATION!

Yes, cut costs . . . and we will prove how you can . . . how you get more for your money when you get Gravely! A FREE demonstration is yours on request . . . *at no obligation*. Or write for "Power Vs. Drudgery" catalog, FREE!

GRAVELY TRACTORS, INC.
BOX 73 DUNBAR, W. VA.

Catalogs for You

Write directly to the manufacturers or use coupon on page 29

A Tool Box on Tires

217 Every municipal department uses tools of one type or another for maintenance and construction jobs. To transport these tools quickly and safely, the AEROIL PRODUCTS CO., INC., 5 WESLEY ST., S. HACKENSACK, N. J., has designed a pneumatic-tired, steel tool box that is 114½ inches long, 49 inches high, and has a loading height of 41 inches. The 6-foot box features a load capacity of 2,000 pounds, a sturdy padlock, and a tow eye that accommodates a wide variety of towing trucks.

Efficient Parking Meters

218 Here is a low-cost parking meter that accepts pennies, nickels and dimes through a single slot in any combination or time limit. Made by the MAGEE-HALE PARK-O-METER CO., the unit boasts positive automatic action, reducing costs and increasing net revenue. For literature address the manufacturer at the COMMERCE EXCHANGE BLDG., OKLAHOMA CITY 2, OKLA.

Cuts Trees and Other Growth Quickly

219 Four specialized cutting heads are offered with this 2-hp power unit, enabling you to cut quickly through trees, weeds, brush and stubble. The Sawette head chain saw fells growths up to 8 inches in diameter; the Trimette head circular blade trims close and spreads mulch evenly; the Scythette head clears weeds and brush; and the guarded 10-inch blade of the Brushette head clears stubble and bramble. For complete information, write HOFFCO, INC., RICHMOND, IND.

Parking Fines Paid "On the Spot"

220 Communities using these business-reply-coin envelope-parking tickets which spare motorists the necessity of appearing in court, have not only established better public relations, they have increased their revenues as well. Information on this modern method of parking-fine collection, together with samples and prices will be sent by ROD W. DAVIS, BROOKHAVEN, MISS.

When Power Fails

221 Generators ranging in size from 2,000- to 15,000 watts, and easily belted to tractors or engine-belt drives are offered by the KATOLIGHT CORP., MANKATO, MINN. This new group of 1,800 rpm emergency power units is especially designed to combat the adverse effects of a power failure. The generators are available in two types, revolving armature and revolving field. Write for *Folder EG1153*.

New Truck-Mounted Loader

222 *Folder 252-160* describes the Eagle Loader, a new truck-mounted unit that can be used all year-round to load dirt, cinders, snow, aggregate and other loose material. The loader handles some 3 to 5 tons of material per minute and travels quickly from job-to-job. For your copy of the new folder, write EAGLE CRUSHER CO., INC., GALION, OHIO.

(See page 38 for more Bulletins)

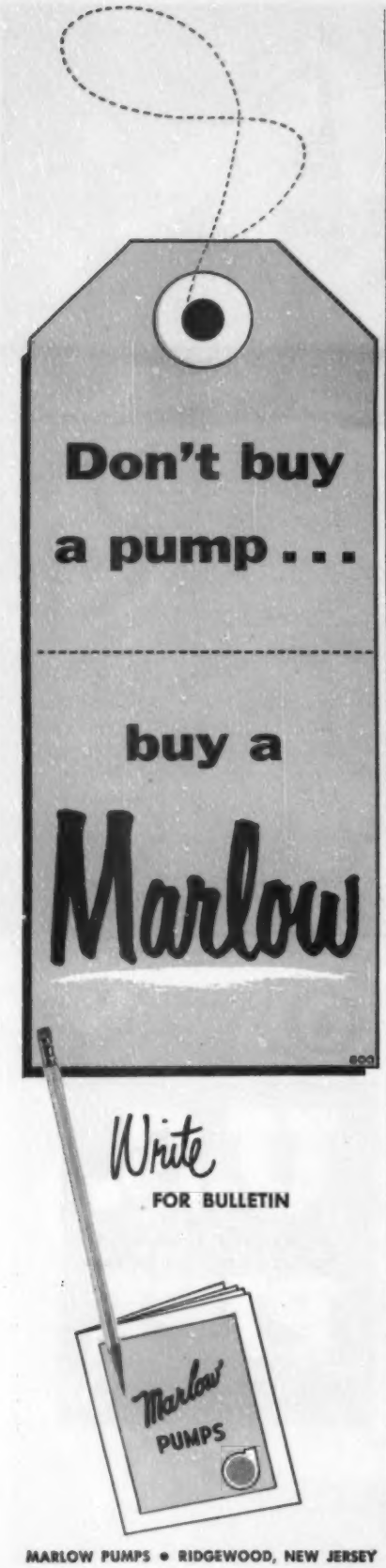
Lithographed on stone for U. S. Pipe and Foundry Co. by John A. Noble, A. N. A.

THIS ILLUSTRATION shows the laying of cast iron pipe in the business section of a small town, which could be for water, gas or sewerage service. Such a situation calls for a pipe with proved long life to be placed beneath the costly permanent pavement. Whether in the business district, residential area or the country, cast iron pipe has established an enviable record of low cost per service year.

We are in an excellent position to furnish your requirements for cast iron pipe, either centrifugally cast in sizes 2- to 24-inch or pit cast for larger sizes—all of which are produced under rigid quality controls and in accordance with standard specifications.

United States Pipe and Foundry Co.,
General Office, 3300 First Ave., N. • Birmingham 2, Ala.
Plants and Sales Offices Throughout the U. S. A.

U.S.
cast iron
PIPE
FOR WATER, GAS, SEWERAGE AND INDUSTRIAL SERVICE



More Literature

Write directly to the manufacturers or use coupon on page 29

Replaces Generator in City-Owned Vehicles

223 Instead of a conventional D.C. generator, cut costs by installing an L-N Alternator in police cars, fire engines, snow removal equipment, tow trucks and other city vehicles, suggests this manufacturer. Alternators are available for 6-volt systems with capacities to 95 amperes and for 12-volt up to 180 amperes. They are now being used in New York City, Los Angeles and Chicago. Write THE LEECE-NEVILLE COMPANY, CLEVELAND 14, OHIO.

An Accurate Water Meter

224 Where measurement accuracy is important, municipalities will appreciate these 1½- and 2-inch disc meters made by the ROCKWELL MFG. CO., PITTSBURGH 8, PA. Each Rockwell Type 6 meter includes a measuring chamber that can be adjusted to five different positions, regulating delivery; also a flexible driving joint between the gear train and register. Most important, these meters assure your city maximum revenue.

Public Pools Offered Championship Diving Boards

225 If good diving equipment is to meet the needs of municipal swimming pool officials, it must be long lasting and inexpensive to maintain. The NORMAN BUCK MFG CO. has designed the Buckboard, used during the 1952 Olympic Games and in many pools throughout the nation. Made of corrosive-resistant aircraft aluminum extrusions and drawn tubes, it retains a uniform spring action, is unaffected by temperature or humidity, and eliminates the need for costly replacements. Address the company at 2332 EASTLAKE, SEATTLE 2, WASH.

Spend Less for Public Swimming Pools

226 These attractive, steel swimming pools are not only inexpensive to install, they cost less to maintain and are easier to clean as well. Designed by TOWER IRON WORKS, PROVIDENCE, R. I., they can be installed indoors and out, and are available with all types of accessory equipment. Seepage from the ground through the pool walls is eliminated, and cracking, crumbling and checking are avoided. Write for details.

Builds Steel Water Tanks, Fire and Rescue Trucks

227 SHARPSVILLE STEEL FABRICATORS, INC., will design and fabricate steel plate to fill every municipal need—ranging from the construction of steel water tanks, to that of sturdy fire, rescue and emergency truck bodies. For literature, address the manufacturer at SHARPSVILLE, PA.

Two Men Can Set Street-Light Poles

228 Setting street-lighting poles is easy with the Winch and Digger-Drive kit made for the Dodge Power Wagon. With it, two men are all that are required to dig the hole and set the pole. The kit makes the work safe, easy, and fast. Write TEL-E-LECT PRODUCTS, INC., MINNEAPOLIS 16, MINN., for detailed literature.

Bores Underground To Install Pipelines

229 Why stop traffic simply to install water and sewer pipe beneath street surfaces? asks one manufacturer. Especially when a Crose boring machine will work underground, installing casings up to 36 inches in diameter. The auger-type unit installs these casings accurately as the boring progresses, eliminating costly cave-ins. It handles concrete and cast-iron pipe, as well as protective casing for buried electrical lines. Write M. J. CROSE MFG. CO., INC., 2715 DAWSON RD., TULSA, OKLA.

Cleaner Sewers With Less Effort

230 Mounted on a well-balanced 4-wheel chassis, the OK Champion power sewer cleaner features all controls at the working end, keeping the operator out of passing traffic and allowing him full view of the operation. The new machine also features a pole-suspended wheel guide that is easily lowered, a built-in gear-reduction ratio, and an automatic safety clutch. CHAMPION CORP., 4716 SHEFFIELD AVE., HAMMOND, IND., will send literature.

Money-Saving Sewage-Lift Stations

231 Get complete details on a low-cost installation for a sewage-lift station that eliminates the need for a pump house. A Weil submersible sewage ejector is the key to this money-saving design. The ejectors are easy to install and are equally simple to remove, featuring non-clog bladeless type impellers. They require a minimum of space and are immune to flooding. Write the WEIL PUMP CO., 1518-A N. FREMONT ST., CHICAGO, ILL.

Announces One-Ton Roller

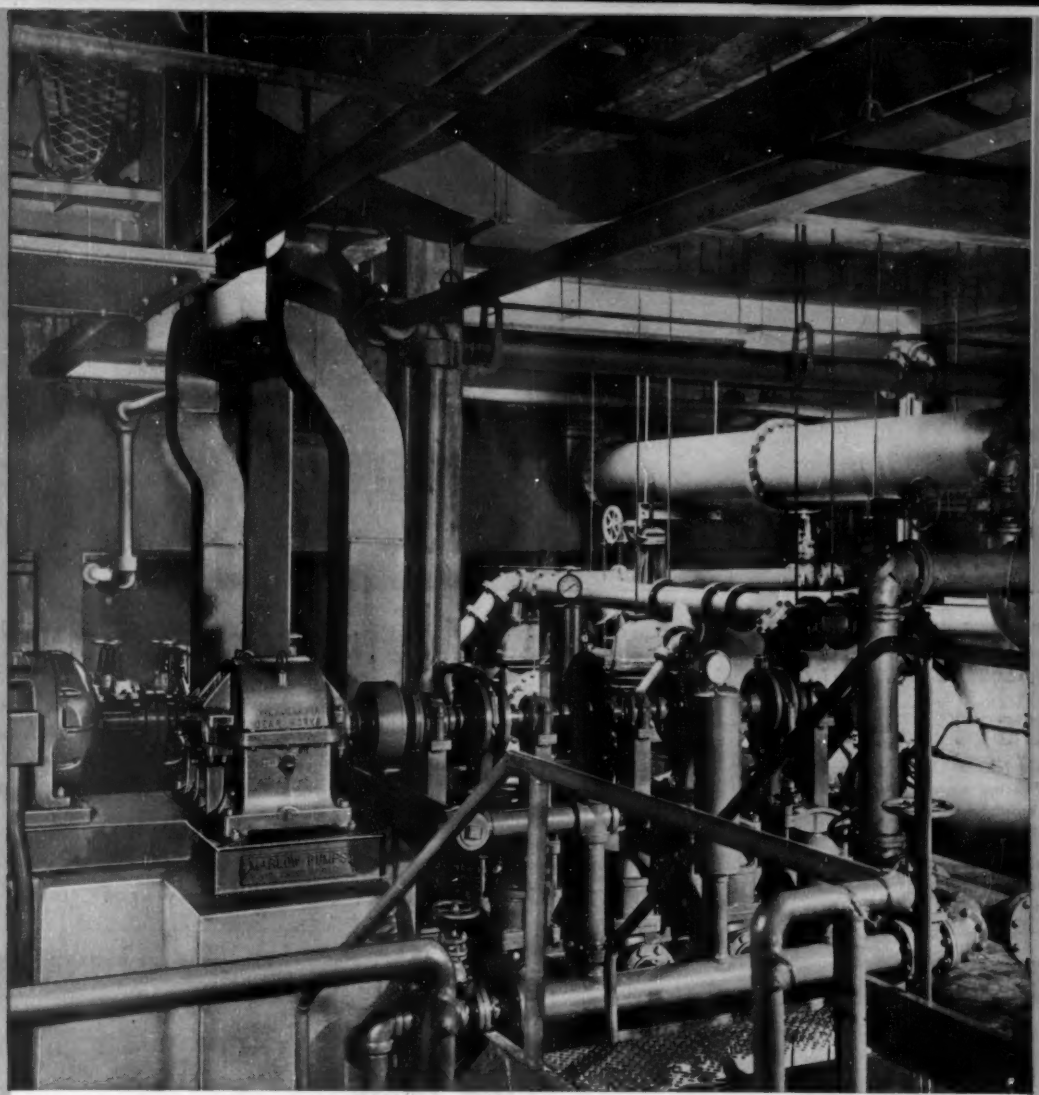
232 GABB SPECIAL PRODUCTS, manufacturer of the ½-ton Motoroller, will introduce a new 1-ton unit this spring. It will incorporate a specially designed center poise hook-up to insure perfect tracking of the front and rear rolls, and geared steering through a split front drum. In addition, it will have a low center of gravity for working on grades and slopes, and should prove simple to transport from job to job. The 1-ton Motoroller is being furnished with water ballast drums and dual-drain plugs. For complete information, address the company at WINDSOR LOCKS, CONN.

Portable Pumps and Generators Reduce Fire Losses

233 Every fire department, should have pumps and generators that are small enough for one man to carry, yet, sufficiently large to perform an adequate job. These gasoline-engine-driven units provide the needed portability, and assure quick, efficient service. They are accurately described in a new "action" booklet, released recently by the HOMELITE CORP., 112 RIVERDALE AVENUE, PORT CHESTER, N. Y.

Floccuation in Sewage Disposal

234 Besides eliminating short circuiting, an efficient flocculation tank will give intimate particle contact without floc destruction. The Type FS Flocculation unit enables a tank to do both. It gives an intermingling and repeated particle contact of the chemicals and suspended materials, and has a homogenizing effect that is said to impart rapid diffusion in slow motion. A discussion of flocculation in general, and the Type FS unit in particular, is available in literature from WALKER PROCESS EQUIPMENT, INC., AURORA 3, ILL. Ask for *Bulletin 2W66.*



DAY AFTER DAY—SEVEN DAYS A WEEK, work goes on uninterrupted at New York City's 26th Ward Sewage Disposal Plant. For the past 10 years (since 1943) ten Marlow Plunger Pumps have been on the job in this plant handling primary sludge, scum and grease, and digested sludge. Never known to exaggerate, the plant's engineers call those Marlows "well behaved" because they keep going, dependably! And that's why plants throughout the country are turning to Marlow Pumps.

marlows are durable!

Rely on rugged Marlow Plunger Sludge Pumps for efficient, economical and dependable handling of industrial or municipal wastes. Years of long, trouble-free service are designed into these durable pumps. They can "take it," even on the toughest pumping jobs, from raw and digested sludges to settled oil solids. For the *complete* answer to your waste disposal problems, see your Marlow dealer or write for Bulletin W-53.

MARLOW PUMPS • RIDGEWOOD, NEW JERSEY

RUST-PROOF, NO PAINTING
MAINTENANCE-FREE
FIRST COST IS LAST COST

COST? IN MOST CITIES,

Nichols NEVER-STAIN Aluminum Chain Link Fencing costs only about 15% more than ordinary fencing on the complete installation.

This slight differential is more than offset the first time an ordinary fence is painted—usually within five years.

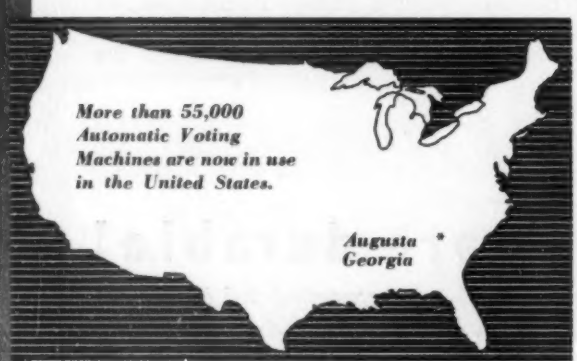
The ideal fence for . . . **PARKS, GARDENS, POOLS, STORE AND EQUIPMENT AREAS, ETC.**

No other type of fencing in this price range offers all of these advantageous economical features. The savings in painting alone will soon pay for the fence itself. Here is modern fencing that enhances the appearance of any property or site. Write for complete descriptive brochure — address Dept. ACM.

NICHOLS WIRE & ALUMINUM CO.
GENERAL OFFICE & FACTORY — DAVENPORT, IOWA

14th in a Series

AUGUSTA, GEORGIA, VOTERS Like Their AUTOMATIC VOTING MACHINES



"Voting machines were used in Richmond County for the first time in history in Wednesday's Democratic Primary.

"That they have proved their value is attested to by the opinion of the voters who used them."

The Augusta Herald
5-15-1952

Augusta, Georgia, uses 85 Automatic Voting Machines

AUTOMATIC VOTING MACHINE CORP.
JAMESTOWN, NEW YORK

Outstanding performance, then and now

At expositions and competitive tests, LaFrance steamers consistently won first prize. On September 8, 1878, the LaFrance Fire Engine pictured at top outperformed all other fire engines at the Grand Trial in Chicago. It threw a stream of water 276 feet 8 inches in less than 10 minutes from a cold start. At Providence, R. I., during the International Association of Fire Engineers Convention (now I.A.F.C.) on August 30, 1916, a series of tests demonstrated the superior performance of American-LaFrance for all types of pumps in motorized fire engines.

The American-LaFrance reputation for leadership has been earned by consistent adherence to high standards of quality and performance. With standardized ratings, competitive testing is no longer the basis for selection. The majority of fire departments now select equipment by the record of consistent, dependable performance; the ability of the manufacturer to render service for the life of the fire engine; and features of construction that provide maximum value with long life. Get your copy of the "EXTRA VALUES" booklet illustrating some of the reasons for outstanding performance of American-LaFrance fire engines.

• THE WORLD'S FINEST FIRE ENGINES •

AMERICAN-LAFRANCE-FOAMITE CORPORATION

ELMIRA, N. Y.

LAFRANCE FIRE ENGINE AND FOAMITE, LTD.

TORONTO, CANADA

Here's Good News!

LE ROI *dependability*

LE ROI *performance*

in a front-end loader and truck mixer line!

Newly formed Le Roi-Transo division offers you an outstanding line of material-handling equipment that delivers the high standards of performance you have come to expect from Le Roi

Now — through the Le Roi-Transo Division — Le Roi brings you front-end loaders and truck mixers — proved performers that do your jobs faster, easier, at less cost.

Le Roi-Transo Front-End Loaders give you the extra power and dependability of famous Le Roi engines, plus mobility and speed — to let you scoop, carry, maneuver, reverse, and dump with pin-point accuracy and efficiency.

Features include patented "Bucket Rocking Action" for faster, heaped loads . . . torque-converter that supplies a smooth flow of power to the drive wheels . . . clutch-type reversing transmission that cuts reversing time 95% . . . low-carry position that assures loader balance, adds safety and maneuverability.

Le Roi-Transo Truck Mixers are Le Roi-powered, truck-mounted mixer-agitators with outstanding performance records for mixing action, fast loading, speedy discharging of slump concrete, shock-free starting and discharge-reversing with a full load.

The patented Transo direct drive eliminates non-productive dead weight — eliminates ring gears, chains, and sprockets, thus cuts replacement and maintenance costs.

Yes, sir, Le Roi-Transo Front-End Loaders and Truck Mixers are engineered to speed your work and keep costs down. In addition, Le Roi provides a nationwide network of distributors that puts genuine Le Roi-Transo parts, skilled mechanics, and expert service as near as your telephone.

Have your Le Roi-Transo distributor tell you more about the Le Roi-Transo unit that meets your requirements. Write for bulletins.

Compressors
Rock Drills
Tractair
Engines
Front-End Loaders
Truck Mixers

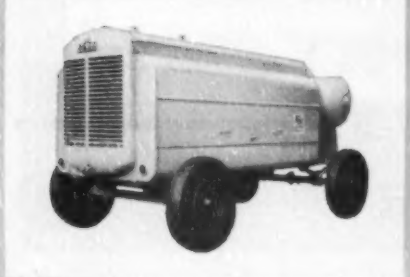
LE ROI COMPANY MILWAUKEE 14, WISCONSIN

A Subsidiary of Westinghouse Air Brake Co.

Plants: Milwaukee • Cleveland—Greenwich—Dunkirk, Ohio • Coldwater, Mich.

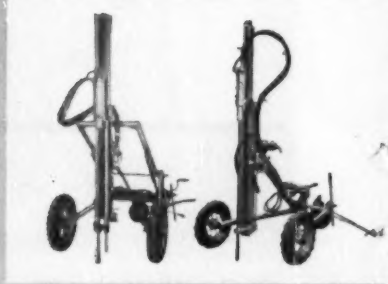
TD-10

LEROI GIVES YOU MORE FOR YOUR MONEY!



Le Roi Airmaster Air Compressors
8 sizes — 14 models

Le Roi Tractair — *Combination 35-hp tractor and 105 cfm compressor*



Le Roi-CLEVELAND Wagon-Drills — *Heavy-duty model DR30 and lightweight DR34*

LE ROI-TRANSO TLF-150
Front-end Loader

4-wheel drive.

Short (84") wheel base.

1 ½-yd. struck flush bucket capacity.

Maximum dumping height of 14' allows easy clearance of bins, hoppers, etc.

Low 36" to 48" normal carry position reduces lift time from ground.

LE ROI-TRANSO TL-100
Front-end Loader
1-cu. yd. capacity. 2-wheel drive.

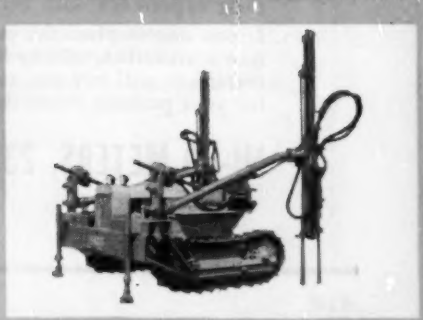
LE ROI-TRANSO Truck Mixers
Shorter and lighter than any mixer-agitator of similar capacity! You can use a lighter-weight truck chassis.

Available in 3, 4, 4½, 5, 5½, 6, 6½-yd. capacities, separate engine or truck-engine drive. Open-drum, standard-door, deluxe-door models.

MORE UTILITY! • MORE PRODUCTION! • MORE PROFITS!

LE ROI

Le Roi-CLEVELAND Paving Breakers and Sinkers — Sizes from 18 to 80 lbs.



Le Roi-CLEVELAND T-286 Self-Propelled Dual Drill Rig — equipped with air-feed sinker drills or drifters

. . . and these two meters—the well-known MI-CO Manual, and the original, time-tested MI-CO Twin Automatic—have helped a great many communities unravel tight traffic situations. How? By always delivering unsurpassed performance. Ask any city using them.

MI-COs operate at full productive capacity, with very few interruptions, for ten years and more. They are built to take rough handling, and to withstand the severest weather conditions.

MI-COs are well known for their consistently high earnings and unusually low maintenance over long periods of time. And servicing is comparatively simple. Should a MI-CO need attention, the adjustment is usually made in a few minutes right at the meter location. This advantage keeps nonproductive time at a minimum. You will find that MI-COs earn more because they are seldom out of order.

The purchase of parking meters represents a major investment. That's why it's so essential to check the records carefully before you buy. Insist on complete records . . . performance, earnings, maintenance, life expectancy. And not for a year or two, but over a period of five to ten years and more.

We'll be glad to submit MI-CO records for installations everywhere, and send a list of cities using MI-COs. Write to any of them about their experience with MI-CO Parking Meters.

If you contemplate the purchase of parking meters, whether it be a new installation, adding to your present meters, or replacing obsolete meters, it will pay you to contact MI-CO. They have much to offer for your parking meter dollars.

MI-CO METERS, 231 Court St., Covington, Kentucky

Division of The Michaels Art Bronze Co., Inc.

MICHAELS PRODUCTS:

Store Fronts
Lettering
Check Desks
Lamp Standards
Marquees
Tablets and Signs
Name Plates
Astragals
Railings
Grilles and Wickets
Kick and Push Plates
Push Bars
Thresholds
MI-CO Parking Meters
Museum Trophy Cases
Bronze and Aluminum Doors
Bank Screens and Partitions

Here's proof...

G-E 2-WAY WILL PERFORM IN ANY CIVIL DISASTER!

● Civil defense authorities throughout the nation agree that successful programs must include dependable radio communication. The system has to function before, during and after an emergency. Well, G-E Mobile Radio does exactly that... and it can be proved!

Note the experience encountered by Tennessee's State Highway Patrol. The car pictured above was caught in a cyclone near Dyersburg . . . turned up on end . . . spun around several times . . . then hurled 1200 feet. An examination of its General Electric mobile transmitter after the disaster showed *just one tube broken and still capable of operation.*

Make this superior communications equipment *your* first line of defense. Buy only General Electric!

You can put your confidence in

GENERAL ELECTRIC

2-WAY MOBILE RADIO

General Electric Company, Section X1044
Electronics Park, Syracuse, New York

Please have a Communications Counselor call at my office.

NAME .....

ADDRESS .....

CITY.....STATE.....

Reduce your SWEEPING COSTS

WITH **MOBIL - SWEEPER**

GET Top Performance AT LOWER COST!

Discover new ways to save money on street sweeping, airport sweeping, and highway sanitation with the big Mobil-Sweeper. Savings of 45% over all previous methods of street sanitation are being reported by Mobil-Sweeper users. Learn more about what communities across the Nation report on actual experiences with this fine sweeper. Many communities say maintenance and upkeep costs are the lowest on record. Manpower requirements are lower too.

Mobil-Sweeper can change street sanitation into a one-man job. Traveling to-and-from the dump at top traffic speeds, Mobil-Sweeper eliminates need for a truck and pick-up crew to follow. Where central dumping is used, Mobil-Sweeper's big hopper capacity makes it a top performer in this system.

You can't overlook safety—a covered cab with shatter-proof windshield gives protection to your operator . . . places him in a position for better visibility—as attested by leading automotive engineers. Four wheel hydraulic brakes are a must on heavily loaded vehicles—Mobil-Sweeper has them.

CONVEYCO

Write for literature today!

MOBIL-SWEEPER

DIVISION OF THE CONVEYOR CO. 3260 E. Slauson Ave. • Los Angeles 58, Calif.

Tenite markers line pedestrian crosswalks at the crossroads of the world, Times Square.

greater safety for drivers, pedestrians

Traffic markers of durable Tenite Butyrate, now being used by municipalities in all sections of the country, are visible two to three blocks away under practically all weather conditions. These brilliant white, yellow, or red disks prove highly effective for marking crosswalks and traffic lanes at busy intersections.

Extremely tough and resilient, the Tenite markers last for years under heavy traffic conditions—eliminate the maintenance problems and costs encountered with painted lines. Their molded-in color cannot chip or wear off, and they resist dirt and tarnishing. Since they require no drying time, they are ready for use immediately upon installation.

In addition to use for municipal traffic control, Tenite markers are ideal for garages, parking lots, and industrial plant areas. For further information, or help in locating a source of supply, write or send coupon to EASTMAN CHEMICAL PRODUCTS, INC., KINGSPORT, TENNESSEE, *subsidiary of Eastman Kodak Company.*

EASTMAN CHEMICAL PRODUCTS, INC., KINGSPORT, TENNESSEE

I am interested in traffic markers made of Tenite Butyrate. Please have manufacturers send literature and price information. ☆

Name_____

Title_____

Company or Municipality_____

Street_____

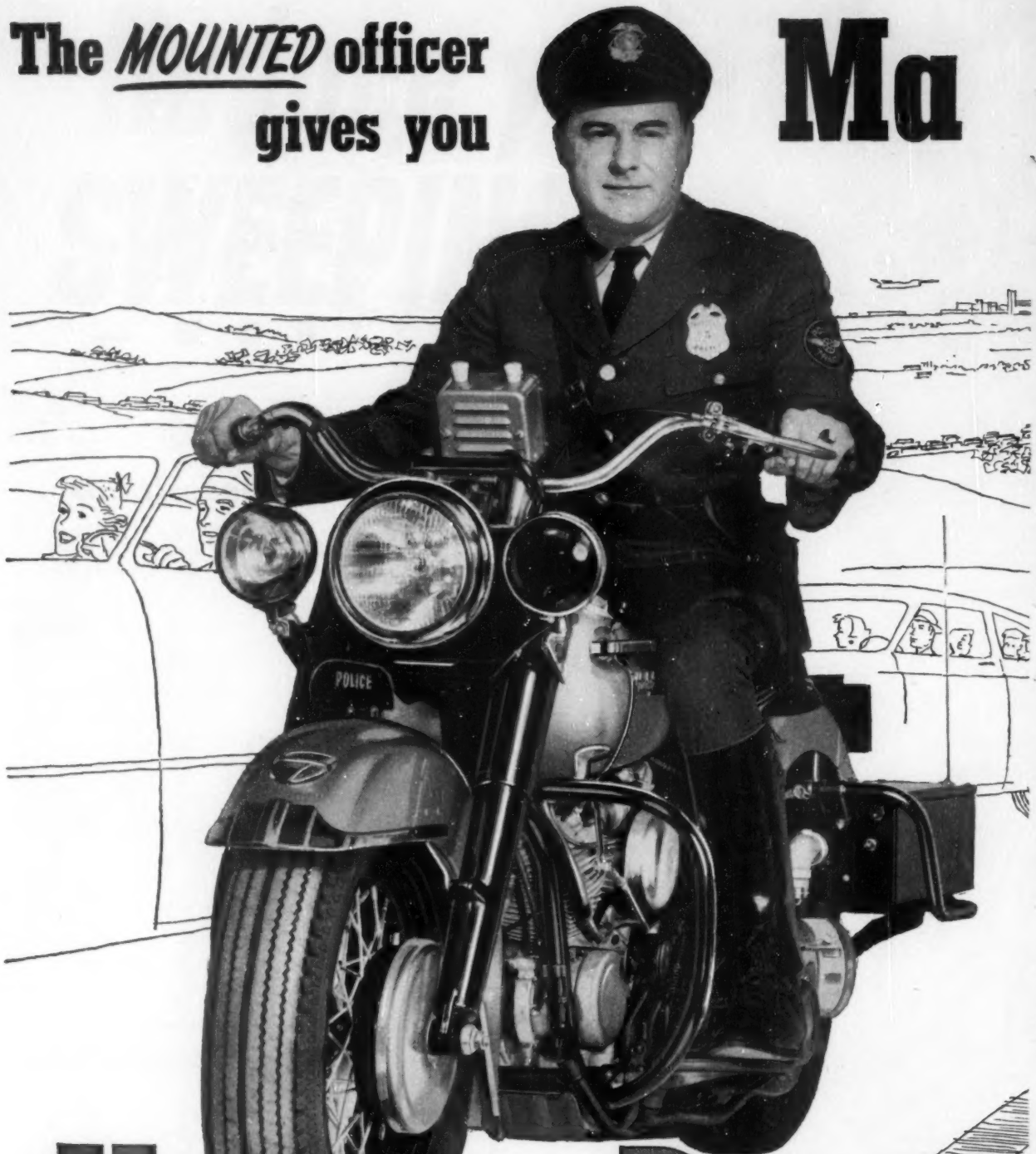
City_____ State_____

AC-4-54

TENITE
BUTYRATE
an Eastman plastic

The *MOUNTED* officer gives you

Ma



HARLEY-DAVI

★ POLICE ★ SOLO BETTER TRAFFIC CONTROL MOTOR

ximum Control··

over "bumper to bumper" week-end traffic

HERE'S tight traffic control that keeps impatient summer motorists in line . . . keeps them moving but discourages them from taking chances that mean accidents and death in your community. Motorists recognize the speed, the manueverability of these power-packed two-wheelers . . . and they drive accordingly.

Harley-Davidson police motorcycles are specially built for the challenges of traffic control in your city, large or small. Get the facts about the Golden Anniversary models from your dealer today. And ask him for your free copy of the valuable, illustrated booklet — "More Effective Police Power." Or write direct to HARLEY-DAVIDSON MOTOR COMPANY, Milwaukee 1, Wisconsin.

DSON

CYCLES

What About *YOUR* Ordinances?

Your municipal ordinances must be, or should be, at the fingertips of every city official, employee and citizen of the city. There is but one solution:

1. Your ordinances must be codified. Each amendment must be accorded its proper place and all "deadwood" provisions eliminated. Your ordinances must be classified according to subject matter. They must be edited, and possibly amended, so as to meet and satisfy today's needs and conditions in your city.
2. They must be checked against the state laws, as last amended, and made to parallel those laws. They must be checked against the latest decisions of the Supreme Court of your state.
3. A complete and comprehensive general index must then be prepared.

Who Can Do This Work?

The answer is: Only a staff of Law Editors who possess
(a) Legal ability and (b) Editorial knowledge, training and experience.

We proudly "fathered" municipal Code work many years ago. We have completed and delivered Codes for hundreds of cities. Our Staff devotes its entire time to work on city ordinances. It's all we do—it's all we know.

We Offer You Our Editorial Services

We will come to your city, confer with you, and meet with your governing body and submit to you a concrete proposal. This will be without any obligation to you.

Just write or wire, collect, our nearest office.

MICHIE CITY PUBLICATIONS COMPANY
Charlottesville, Virginia — P. O. Box 57

MICHIE CITY PUBLICATIONS COMPANY OF LOS ANGELES
Los Angeles, California — P. O. Box 4129

ONLY Geerpres WRINGERS

(1) Have exclusive Interlock Gearing
(2) which multiplies wringer pressure
(3) to squeeze mops drier
(4) and eliminate all splash

Fully guaranteed Available in two styles and three size ranges to meet all mop wringing requirements. For further information write to:

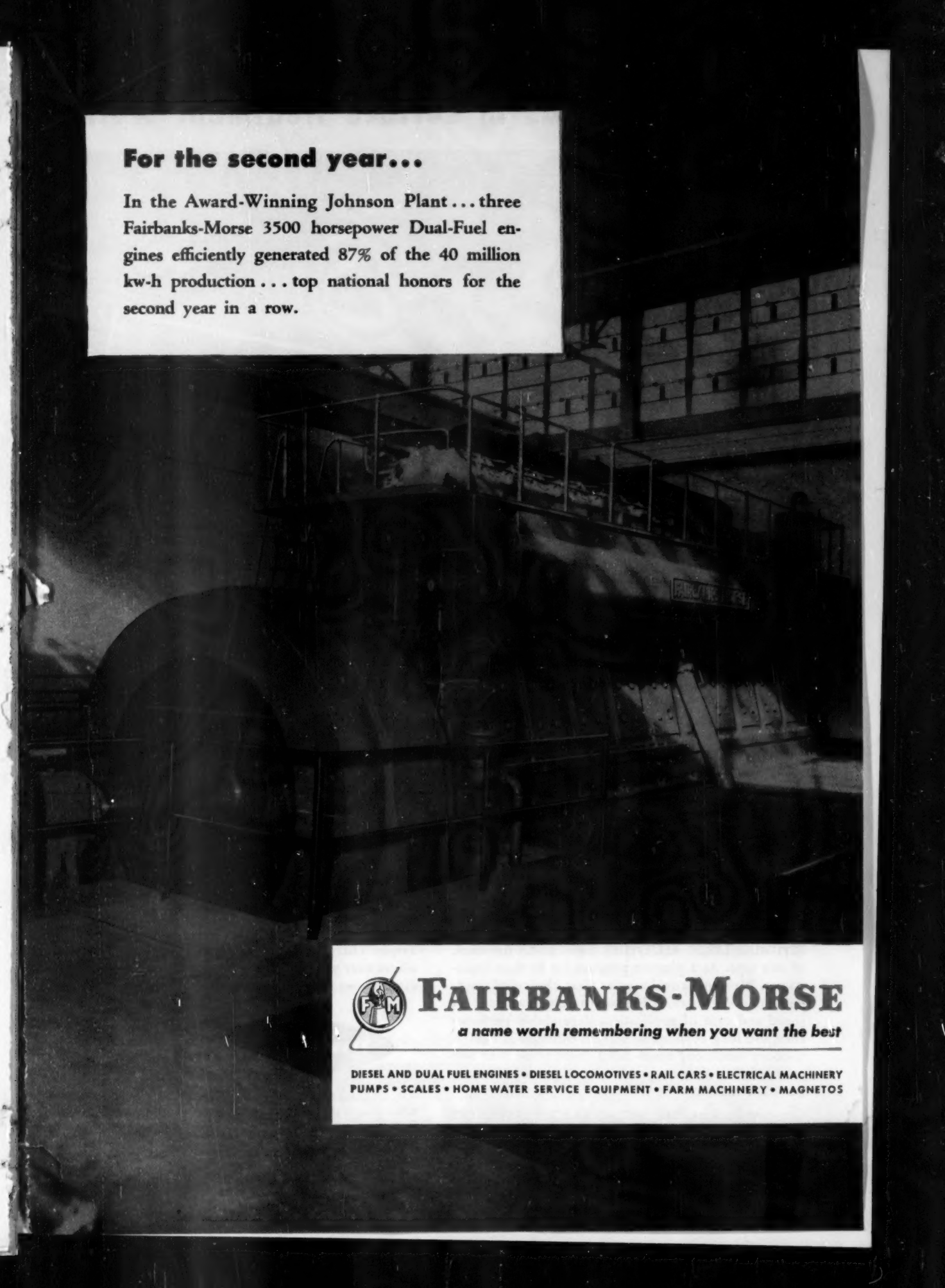
GEERPRES WRINGER, INC.
Manufacturers of High Grade Mopping Equipment
P.O. BOX 658 • MUSKEGON, MICHIGAN

Public Property *PROTECTION* is our business

For your protection Stewart produces chain link wire and iron picket fence; wire mesh partitions; wire window guards; steel folding gates. Also flagpoles; setters; bronze plaques and other metal specialties. Write for catalogs. Please mention products in which you are especially interested.

THE STEWART IRON WORKS CO., INC.
2121 Stewart Block, Cincinnati 1, Ohio
Experts in Metal Fabrications since 1886

Stewart IRON and WIRE FENCES


For the second year...
In the Award-Winning Johnson Plant... three Fairbanks-Morse 3500 horsepower Dual-Fuel engines efficiently generated 87% of the 40 million kw-h production... top national honors for the second year in a row.
FAIRBANKS-MORSE
a name worth remembering when you want the best
DIESEL AND DUAL FUEL ENGINES • DIESEL LOCOMOTIVES • RAIL CARS • ELECTRICAL MACHINERY
PUMPS • SCALES • HOME WATER SERVICE EQUIPMENT • FARM MACHINERY • MAGNETOS

BITUMULS® leads in surface treatment work!

You will be interested in these facts obtained in our recent nation-wide survey:

- In the past five years most of the states in the union have *increased* the volume of sealing and surface treatment work done with asphalt emulsions.
- A majority of the counties in the country now *prefer* the use of emulsions to hot asphalt, tar and cutbacks for surface treatments.

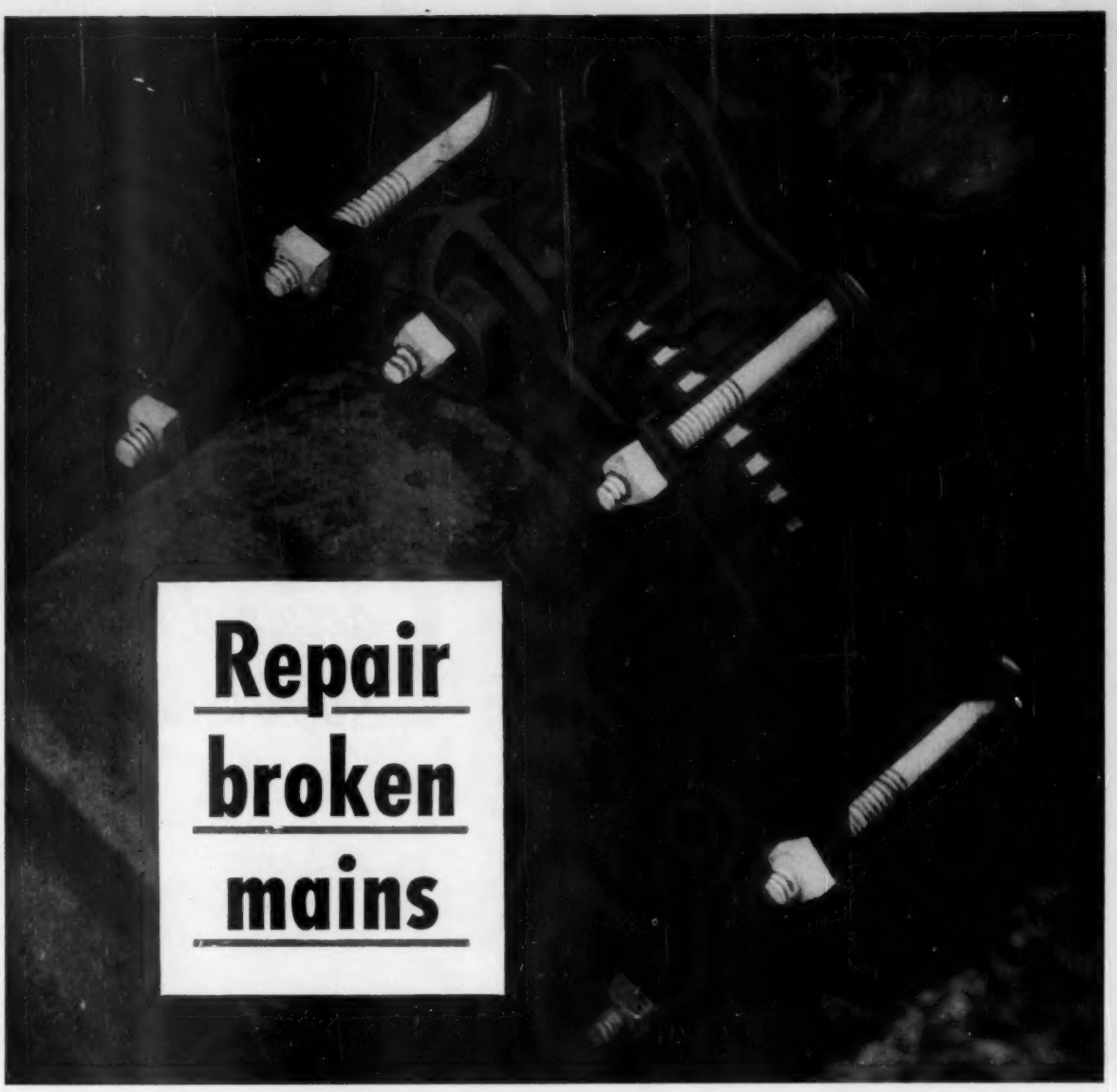
BITUMULS LEADS ALL OTHER EMULSIONS for work of this type. As a pioneer product for Surface Treatments, Bitumuls continues as first choice of road-builders everywhere. It has won acceptance based on speed and ease of application, dependable performance, and long economical service. Bitumuls HV (high viscosity emulsion) holds more cover stone than any other binder. It sets-up faster, and provides a safe, non-skid surface.

Our new booklet, "BITUMULS SURFACE TREATMENTS AND PENETRATION PAVEMENTS," gives full details on all types of Surface Treatments, Single, Double and Triple. There are Bitumuls Engineers working out of offices near you who will welcome an opportunity to discuss your Surface Treatment work.

AMERICAN Bitumuls & Asphalt COMPANY

200 BUSH STREET, SAN FRANCISCO 4, CALIFORNIA

E. Providence 14, R. I. Perth Amboy, N. J. Baltimore 3, Md. Mobile, Ala.
Columbus 15, Ohio Tucson, Ariz. Seattle, Wash. Baton Rouge 2, La.
St. Louis 17, Mo. Inglewood, Calif. Oakland 1, Calif. Portland 7, Ore.
Washington 5, D. C. San Juan 23, P. R.



One man — 5 to 15 minutes

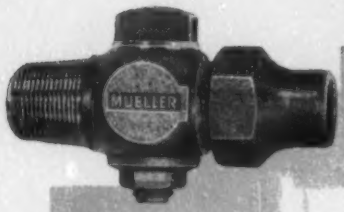
In the SKINNER-SEAL SPLIT COUPLING CLAMP, gasket is SEALED at break by Brass Band; at top where compression rings intermesh, by Monel Metal Band. Insures against recurrence of trouble by introducing a degree of flexibility in the line. Each clamp tests to 800 pounds line pressure. Sizes 2"-24" inclusive. Be prepared — order your supply today.

WRITE FOR CATALOG!

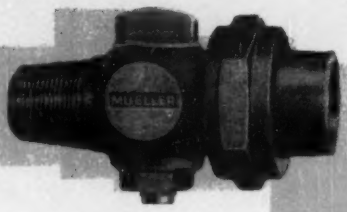
M. B. SKINNER CO., SOUTH BEND 21, INDIANA

SKINNER-SEAL SPLIT COUPLING CLAMP

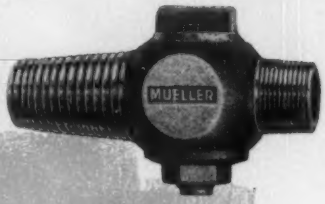
MUELLER®



H-15000 with Mueller Thread inlet—straight copper coupling nut outlet



H-10002 with Mueller Thread inlet—lead flange outlet



H-9990 with wood main thread inlet—I.P. thread outlet (same size as inlet)

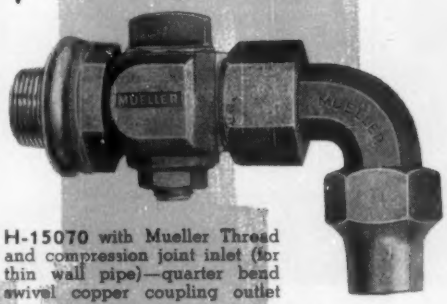
CORPORATION STOPS

designed for your Specific needs!

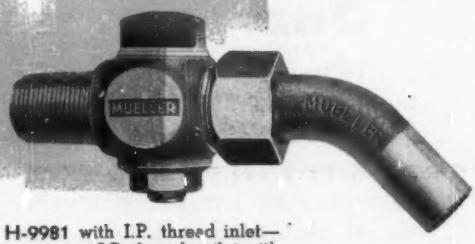
Since 1857, Mueller Co. has been vitally interested in the design and manufacture of high quality Water Works Bronze. This interest has resulted in the Mueller Thread—adopted as standard corporation stop thread by the AWWA, the introduction of copper service pipe and copper service connection thread design, as well as many other improvements for the water works industry.

All components of Mueller Corporation Stops are cast from Mueller Water Works Bronze; the key is precision ground and lapped into the body, and carefully tested and inspected. All exposed threads are accurately machined and coated with protective plastic, assuring arrival in an undamaged condition. This extra precaution also assures their quick, easy insertion into the main under pressure with your Mueller Tapping Machine.

Consult your Mueller Water Works Catalog W-96 or your Mueller Representative, or write direct for complete range of sizes and types.



H-15070 with Mueller Thread and compression joint inlet (for thin wall pipe)—quarter bend swivel copper coupling outlet



H-9981 with I.P. thread inlet—increasing I.P. thread outlet with eighth bend coupling for wiped joint

H-15035 with I.P. thread inlet—eighth bend copper coupling outlet

MUELLER CO.

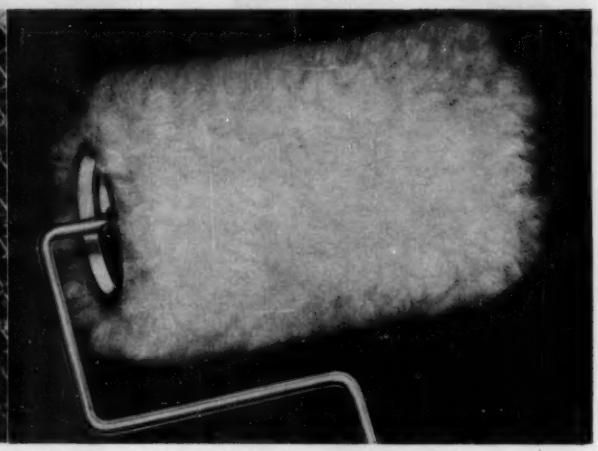
Dependable Since 1857

MAIN OFFICE & FACTORY DECATUR, ILLINOIS

Cut wire fence re-coating costs!

Users Report Savings of 30% to 40% With Rust-Oleum Extra-Long Nap Lamb's Wool Roller!

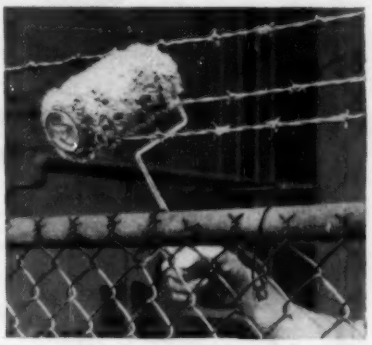
Special roller glides easily over wire sections. (Rusted sections have already been primed with Rust-Oleum 769 Damp-Proof Red Primer to Stop Rust.) Finish coat is Rust-Oleum 470 R.M. Aluminum.



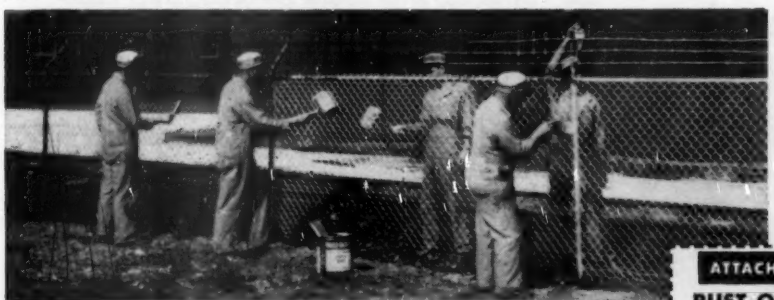
A *new, exclusive, different-type* roller! Greater diameter, specially selected skins, extra-long Lamb's Wool – all combine to give you more coverage faster and easier in the new Rust-Oleum Roller-Coating System.

Close-up shows how Extra-Long Nap Wool reaches around to coat approximately 70% of other side of fence at same time. Rust-Oleum's *exclusive* penetrating qualities saturate cross wire sections for desired mil thickness.

Man follows with "dry" roller on opposite side of fence to catch and use surplus "tears" and quickly coat remaining 30% of wire sections.



Even barbed wire sections can be roller-coated in one easy pass. 99% of the material is used on the fence – *not* on the workers, *not* on the ground.



On long distances of fencing, a 5 man production "team" can achieve even greater savings. The first man wirebrushes the surface to remove dirt, dust, rust scale, etc. The second man applies Rust-Oleum liberally by roller, coating the wire sections and barbed wire. The third man follows on the opposite side of the fence with a "dry" roller to catch and use the surplus. The fourth and fifth men work on opposite sides of the fence, brushing the pipe framework and the barbed wire arms. See how this new Rust-Oleum system can save you money. Attach coupon to your letterhead, mail *today*.

RUST-OLEUM®

STOPS RUST!

ATTACH TO YOUR LETTERHEAD – MAIL TODAY!

RUST-OLEUM CORPORATION
2514 Oakton Street, Evanston, Illinois

Please show us how your new Extra-Long Nap Lamb's Wool Roller will cut our wire fence re-coating costs. Include prices, complete literature about Rust-Oleum and nearest source of supply. We have approximately_____ yards of wire fencing.

QUIET
as a kitten

ENTERPRISE has cut "Noise Level" to a minimum —all parts hum smoothly, wear longer

Enterprise has gone far in taking the head-splitting noise and damaging vibration out of diesel operation. From base to manifolds, ENTERPRISE Diesels are carefully engineered and constructed to overcome harmful vibrational effects and noise – without sacrificing any of the famous ENTERPRISE high performance features. By all comparison, the resulting smooth operation is "quiet as a kitten." A low noise and vibrational level means less wear, lower maintenance cost, higher overall efficiency and economy.

This is but another of the many plus values enjoyed by ENTERPRISE customers the world over. Get all the facts... and your choice, too, will be ENTERPRISE.

Write for descriptive bulletins, or call your nearest ENTERPRISE *Diesel Sales office.*

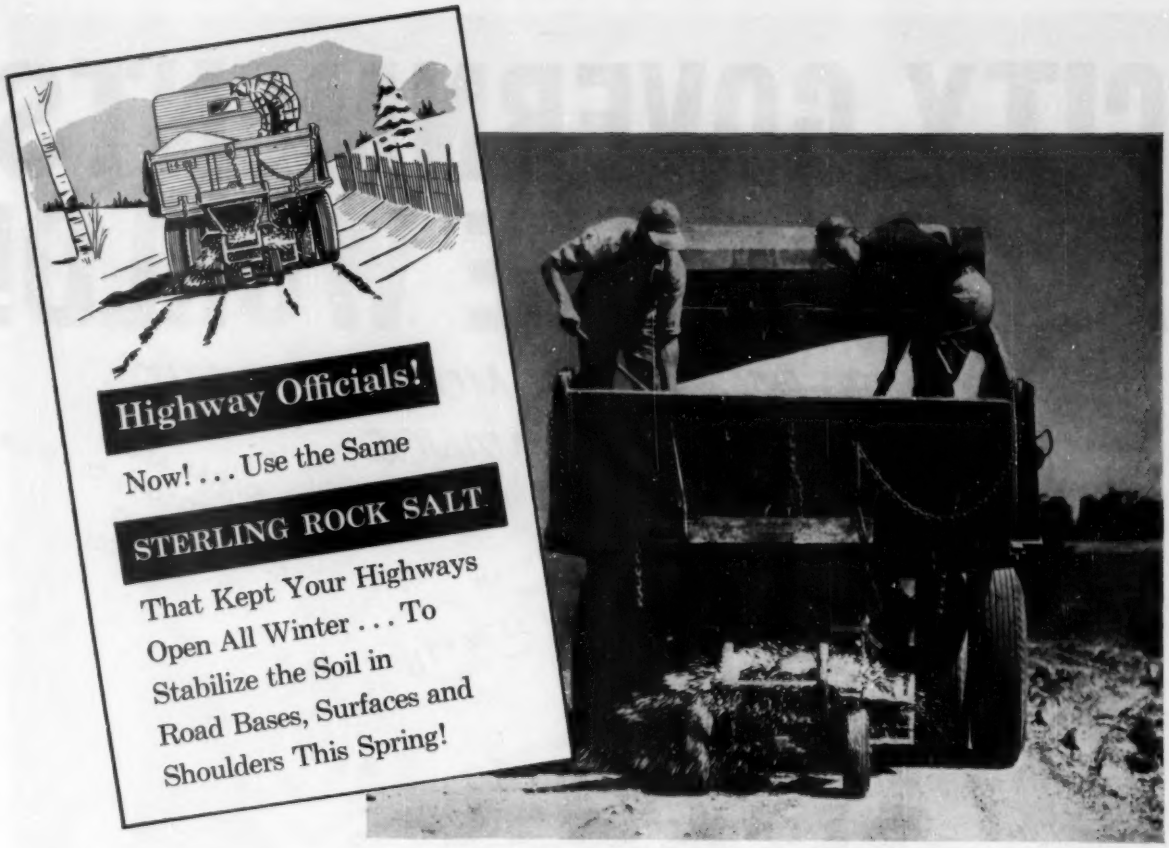
Check these points on Enterprise Quiet-Running Diesels

- Complete precision surface finishing of all moving parts to close tolerances permits accurate control of weights and balances, helps keep noise and wear to a minimum.
- Conservative speed ratings result in major reduction of noise.
- Carefully engineered injection system minimizes "injection knock."
- Base, block, gear case and cylinder heads are of heavy-sectioned cast iron, providing a maximum damping of internal noise.
- Water jacketed manifolds absorb exhaust noises.
- Modern design decreases flat external surfaces which act as sounding boards.

There is nothing finer in Heavy-Duty Diesels!

Enterprise
DEPENDABLE
Diesels

ENTERPRISE ENGINE & MACHINERY CO.
18th & Florida Streets, San Francisco 10, California
A SUBSIDIARY OF GENERAL METALS CORPORATION
Boston • Chicago • Denver • Kansas City • Los Angeles
Minneapolis • New Orleans • New York • San Diego
San Francisco • Seattle • St. Louis • Washington, D.C.
DIESEL ENGINES • OIL BURNERS • PROCESS MACHINERY


Highway Officials!
Now! . . . Use the Same
STERLING ROCK SALT
That Kept Your Highways Open All Winter . . . To Stabilize the Soil in Road Bases, Surfaces and Shoulders This Spring!

TOUGHER ROADS! SHOULDERS THAT STAY PUT!

Stabilize the Soil and You Minimize Construction and Maintenance Costs!

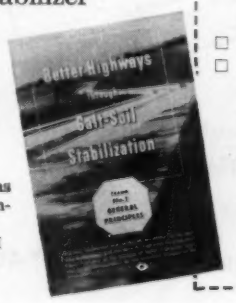
Highway soil, properly stabilized with STERLING ROCK SALT, resists both excessive moisture and extreme dryness. Granular materials are firmly anchored. Even the strong vacuum action of speeding traffic raises little dust. Precious gravel is not blown away.

Gravel roads . . . inexpensive to build and easy to maintain . . . become first class surfaces, smooth, permanent. Bases and shoulders of concrete or black-top highways do not "break up" or "separate" under weather extremes or the cruel beating of heavy trucks.

Start now, using whatever STERLING ROCK SALT you have left over from the winter. Forecast your needs and order now for spring and summer. Make sure of delivery when you need it!

"Nature's Own Soil Stabilizer"

STERLING ROCK SALT



Free! Send for these Bulletins—filled with practical, on-the-job information for roadmen . . .
"BETTER HIGHWAYS THROUGH SALT-SOIL STABILIZATION"

INTERNATIONAL SALT CO., INC.
Industrial Division, Scranton 2, Pa.

☐ Please have representative call.

☐ Please put me on your list to receive "Better Highways" Bulletins.

Name _____

Title _____ Dept. _____

Street _____

City _____ Zone ____ State _____

CITY GOVERNMENTS ACROSS THE WORLD!

RECOGNIZE ROTO-PAC's FASTER, MORE EFFICIENT MORE ECONOMICAL PERFORMANCE

THEY BUY ROTO-PAC

N. Y. C. HAS ADDED 370 NEW ROTO-PACS TO ITS ALREADY LARGE ROTO-PAC FLEET

CALENDAR
of the
BOARD OF ESTIMATE
of the City of New York

May 14, 1953

180

The Department of Sanitation in support of its preference for the escalator compactor body cites the following among its reasons:

1. Universal use of the unit on all types of collection service at maximum efficiency. Unit can be assigned to any collection route whether on straight ashes, garbage or mixed refuse. This flexibility of assignment is especially important in the light of the extension of the incinerator program and the separation of ashes.

2. Due to a smaller hopper opening there is less spillage both on the part of the loaders and as a result of winds. Likewise the operation is more sanitary since the loaders are not exposed to the refuse and odors as is the case on a batch-type large hopper.

3. Batch-type unit is a single purpose truck for mixed material and not fully satisfactory for straight collection of ashes.

4. As a continuous loader, the escalator compactor unit daily payload performance is greater than the batch-type unit.

5. During a comparable nine month period of the term of the manufacturer's guarantee on the latest delivseries of 210 escalator-type and 140 batch-type units the average percentage of lost days due to repairs to days assigned to district garages in the case of the escalatorunit equalled only 1.8% while for the batch-type the average percentage was 19.5%.

6. The Consulting Engineers employed by the Mayor's Committee on Management Survey to study the operations of the Department of Sanitation recommended that the escalator-compactor type collection truck become the standard collection unit for future purchases.

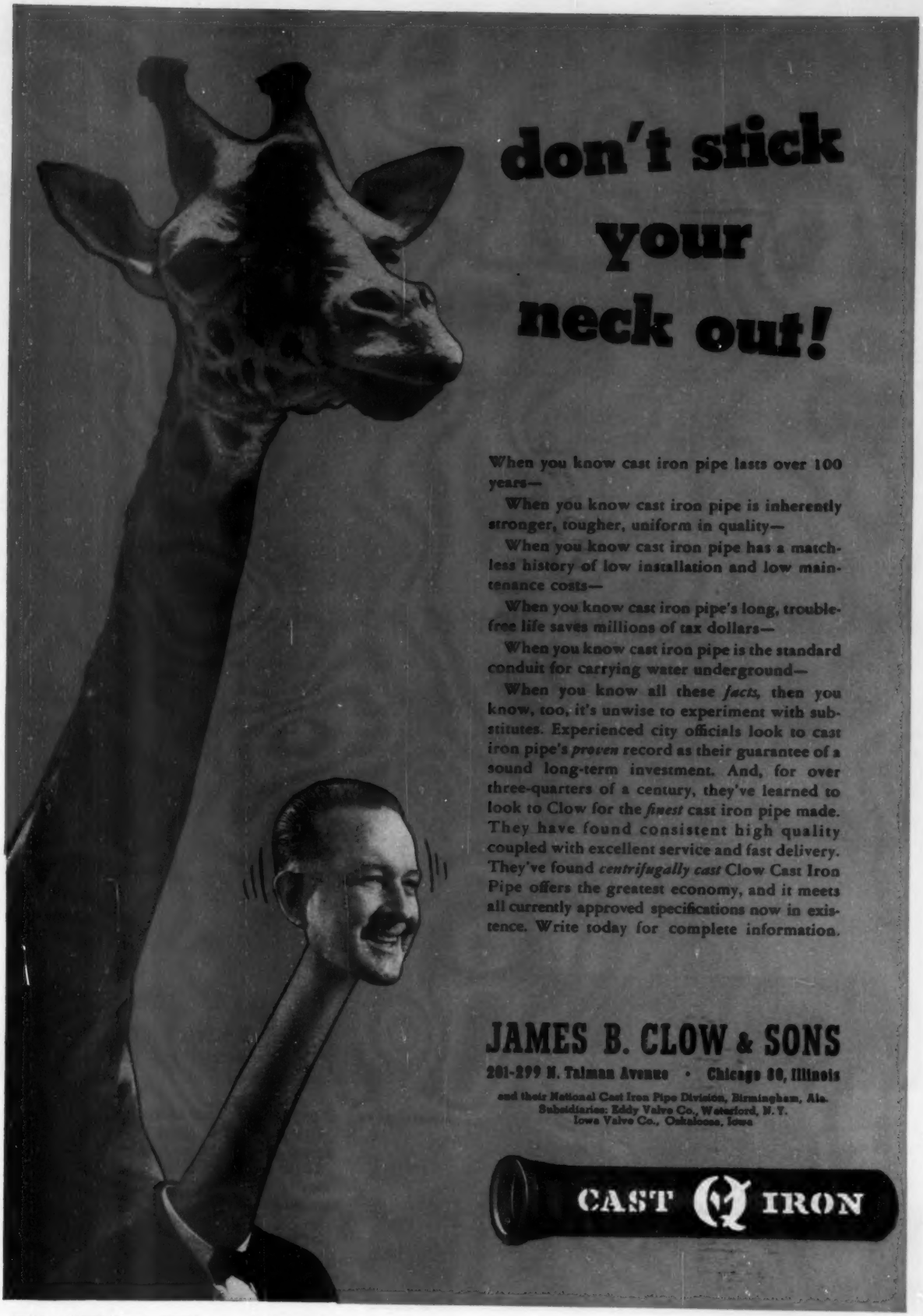
7. It is the Department of Sanitation's intention to standardize its refuse collection truck fleet on the escalator type...

FOR FURTHER INFORMATION OR A DEMONSTRATION WRITE

There is nothing faster or more efficient in refuse loading than automatic, continuous loading and packing

There is nothing faster or more efficient than ROTO-PAC

CITY TANK CORP.
53-09 97th PLACE
CORONA, LONG ISLAND, N. Y.


don't stick your neck out!
When you know cast iron pipe lasts over 100 years—
When you know cast iron pipe is inherently stronger, tougher, uniform in quality—
When you know cast iron pipe has a matchless history of low installation and low maintenance costs—
When you know cast iron pipe's long, trouble-free life saves millions of tax dollars—
When you know cast iron pipe is the standard conduit for carrying water underground—
When you know all these *facts*, then you know, too, it's unwise to experiment with substitutes. Experienced city officials look to cast iron pipe's *proven* record as their guarantee of a sound long-term investment. And, for over three-quarters of a century, they've learned to look to Clow for the *finest* cast iron pipe made. They have found consistent high quality coupled with excellent service and fast delivery. They've found *centrifugally cast* Clow Cast Iron Pipe offers the greatest economy, and it meets all currently approved specifications now in existence. Write today for complete information.
JAMES B. CLOW & SONS
201-299 N. Talman Avenue • Chicago 80, Illinois
and their National Cast Iron Pipe Division, Birmingham, Ala.
Subsidiaries: Eddy Valve Co., Waterford, N. Y.
Iowa Valve Co., Oskaloosa, Iowa
CAST IRON

ALLIS-CHALMERS AD-40 MOTOR GRADER GIVES YOU

Capacity

TO MOVE THE BIG LOADS

The Allis-Chalmers AD-40 Motor Grader is designed with the power, strength and performance features for BIG output in any going.

Full 104 brake hp. engine with power and speed to give maximum production on every heavy-duty grading job.

Famous ROLL-AWAY moldboard moves more material with less power output because it rolls the load.

Plenty of strength in the heavy-duty clutch, transmission and final drive backs up the big blade capacity, while the exclusive single member tubular main frame absorbs the stress of large loads.

Power steering absorbs wheel shock, helps operator keep machine "on grade" with minimum effort.

High clearance at front axle and under circle means capacity loads without interference.

ROLL-AWAY is an Allis-Chalmers trademark.

Control

FOR FINISHING TO THE BLUE TOPS

The AD-40 is outstanding in the stability and full, precise control it offers for close tolerance work.

"Pilot house" visibility lets operator see the front wheels and both ends of the blade while sitting or standing.

Operator "feel" for the close finish work comes with mechanical linkage used on the AD-40.

Smooth, easy control with hydraulic steering, faster speed selection with constant mesh transmission, positive hydraulic brakes — all help the operator do a better job.

Blade work is accurate, smooth because front-mounted lift cases eliminate long lift-arm shafts that twist or wind up under load. Tandem drive and shock-absorbing frame add to stability, help prevent blade chatter.

Full range of blade positions plus leaning front wheels permit handling all types of grading with ease.

Operator conveniences include adjustable seat and steering wheel, roomy platform, easily reached controls, full-view instrument panel.

HUGS BANKS AND STEEP GRADES

The AD-40's low center of gravity lets you grade on steep slopes. Proved engineering design keeps grader weight close to the ground . . . gives hugging ability second to none. Plenty of traction and extra stability resist side thrust . . . add to maneuverability.

In addition to the production and control advantages the AD-40 offers, exclusive repair and maintenance accessibility features make it the easiest grader to service. Why not see your Allis-Chalmers dealer for the complete story — or better yet, let him demonstrate the AD-40 right on your own job.

ALLIS-CHALMERS
TRACTOR DIVISION — MILWAUKEE 1, U. S. A.

WHY you should buy *the NEW* HOLAN Series 2200 Mechanical Ladder

You can use a little man . . .

Without effort he can elevate the 2200—a heavy man or a strong back is not necessary—just turn a crank.

GEAR & SECTOR ELEVATION

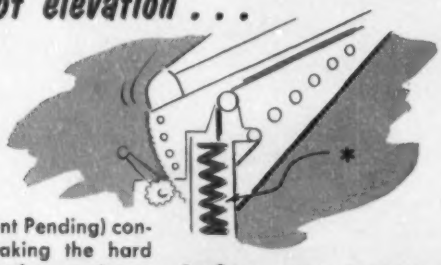
Eliminate Strain & Pain . . .

(on Hill or Crown)

Don't get "pinned" between the ladder and body. Don't strain to turn a heavy ladder on a hill—just turn a crank.

plus **WORM & GEAR TURNING**

Ease of elevation . . .



New (Patent Pending) concept of taking the hard work out of operating a mechanical ladder. A new tension spring and 2½ turns of the crank does the work.

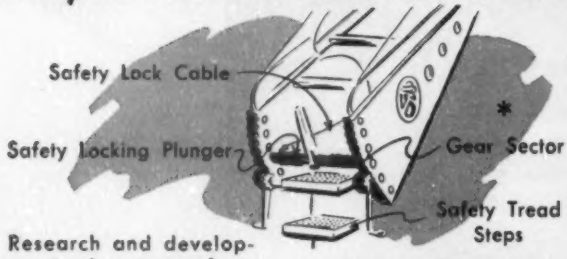
plus **CENTER SPRING COUNTERBALANCING**

Savings justify cost . . .

Greater production through less fatigue using roller bearings—worm and gear—only ladder today that has these two features as standard equipment.

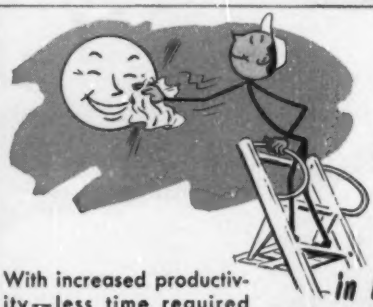
plus **ROLLER BEARINGS**

Compare these features—ALL NEW!



Research and development, plus years of experience give you sound products—more for your money—plus safety.

plus **SAFETY**



This ladder is no afterthought. It is the first all new ladder in many moons . . .

With increased productivity—less time required per job—more jobs completed per day, your savings quickly surpass the cost.

plus **COST EQUALS SAVINGS**

*Another HOLAN "First"

J. H. HOLAN CORPORATION

MOBILE EQUIPMENT FOR PUBLIC UTILITIES

4100 West 150th Street • Cleveland 11, Ohio

Distributors

BAKER EQUIPMENT ENGINEERING CO.
Charlotte, N. C. • Columbia, S. C.
Richmond, Va.

SCHETKY EQUIPMENT CORP.
Portland, Ore.

District Sales Representatives

6-03 161st Street, Beechhurst, Queens, New York • 863 Wilson Drive, New Orleans, Louisiana
2754 N. 92nd Street, Milwaukee 10, Wisconsin

Export Representative

COPPERWELD STEEL INTERNATIONAL • 117 Liberty St., New York 6, N.Y., U.S.A.

GREATER OUTPUT LOWER UPKEEP WITH NEW TORQUE CONVERTER DRIVE

New standards of tractor-shovel performance are being set by the famous 1½ yd. Model HM "PAYLOADER" because a NEW Torque Converter drive has been added to its many features. A year of extensive field-testing proves that this new development insures faster, lower-cost materials handling because output is increased up to 1/3 and maintenance is drastically reduced.

Combined with the 4-speed, full-reversing transmission, the Torque Converter provides an unlimited range of automatically selected speeds to meet the load and operating conditions. Parts breakage and maintenance are less because shock loads are absorbed.

Prove to yourself that this pioneer four-wheel-drive tractor-shovel, with torque converter, is the finest tractor-shovel available. Ask your "PAYLOADER" Distributor for a demonstration, or write The Frank G. Hough Co., 710 Sunnyside Ave., Libertyville, Illinois.

TORQUE CONVERTER DRIVE

MORE EFFICIENCY — Engine operates at most efficient speeds — no laboring or stalling

LOWER MAINTENANCE — Oil cushion absorbs load shocks—protects vital parts

EASIER OPERATION — Eliminates much gear-shifting and "clutching"

GREATER OUTPUT — Machine operates at highest speed in relation to load

Write for full details on the big 1½ yd. Model HM, or on any of the six smaller "PAYLOADERS" — 1⅛ yd., 1 yd., ¾ yd., ½ yd. or 12 cu. ft. sizes.

YOU CAN'T COMPETE IF YOUR EQUIPMENT IS OBSOLETE

SAY "HUFF"

PAYLOADER®

THE FRANK G. HOUGH CO. • Since 1920

FAST! EASY! convenient...

MANAGEMENT: For Copying Letters, Reports, Contracts, Instructions, Statistics, Etc.

SALES: For Copying Orders, Letters, Inquiries, Presentations, Price Sheets, Etc.

PHOTOCOPYING

MANUFACTURING: For Copying Schedules, Work Sheets, Control Sheets, Master Records, Inventory Records, Etc.

SHIPPING: For Copying Receipts, Claims, Freight Bills, Packing Slips, Bills of Lading, Etc.

Use It To Copy

ANYTHING right in your own office!

APECO Systematic Auto-Stat

EVERY DEPARTMENT can use the Apeco Systematic Auto-Stat. This new all electric photocopying machine prints, processes and dries automatically. It's fast—dry copies in less than 45 seconds! It's convenient—fits on the corner of any desk . . . It's ready for instant use! It's easy—anyone can operate it! Saves up to 80% on copying jobs. Eliminates retyping, hand copying, checking or costly outside copying service. Makes legally accepted black and white or colored copies from any original up to 11" x 17"—printed on one or two sides. So low cost—a complete Apeco Systematic Auto-Stat installation is priced well within the budget of even the smallest firm.

Lifetime service Guarantee

NEW COMPLETE PHOTOCOPY INFORMATION KIT—IT'S FREE

American Photocopy Equipment Co.
1937 W. Peterson, Chicago 26, Illinois

RUSH ME NEW PHOTOCOPY INFORMATION KIT containing booklet on the Apeco Auto-Stat plus separate folders on copying tax returns, color copying and copying on preprinted forms.

Name_____

Firm_____

Address_____

City_____ State_____

In Canada: APECO OF CANADA, LTD., 134 PARK LAWN ROAD, TORONTO, ONT.

PORCELAIN ENAMEL
HOUSE NUMBERS

4 6 5

and Aluminum Number Holders

These 2" x 3" house numbers have the figures in black against a white background. Can be used with or without holders as each number has holes for mounting.

Holders which are available for two or more numbers are made from aluminum.

Numbers are quickly inserted into the holder and a tab which is easily turned up holds the numbers securely in position.

Write for quantity prices.

STANDARD SIGNS, INC.
3199 EAST 65th ST., CLEVELAND 27, OHIO

VERSATILITY is the keynote in SHAWNEE EQUIPMENT

• Long Trenches 9½ ft. deep
• Loading

• Spot Excavations 8½ ft. deep
• Digs Straight Down
• Loading

HYDRO-CLAM CONVERTS TO BACKHOE SIMPLY BY CHANGING BUCKET BOOMS

Ideal for large and small operators—Municipalities and Counties.

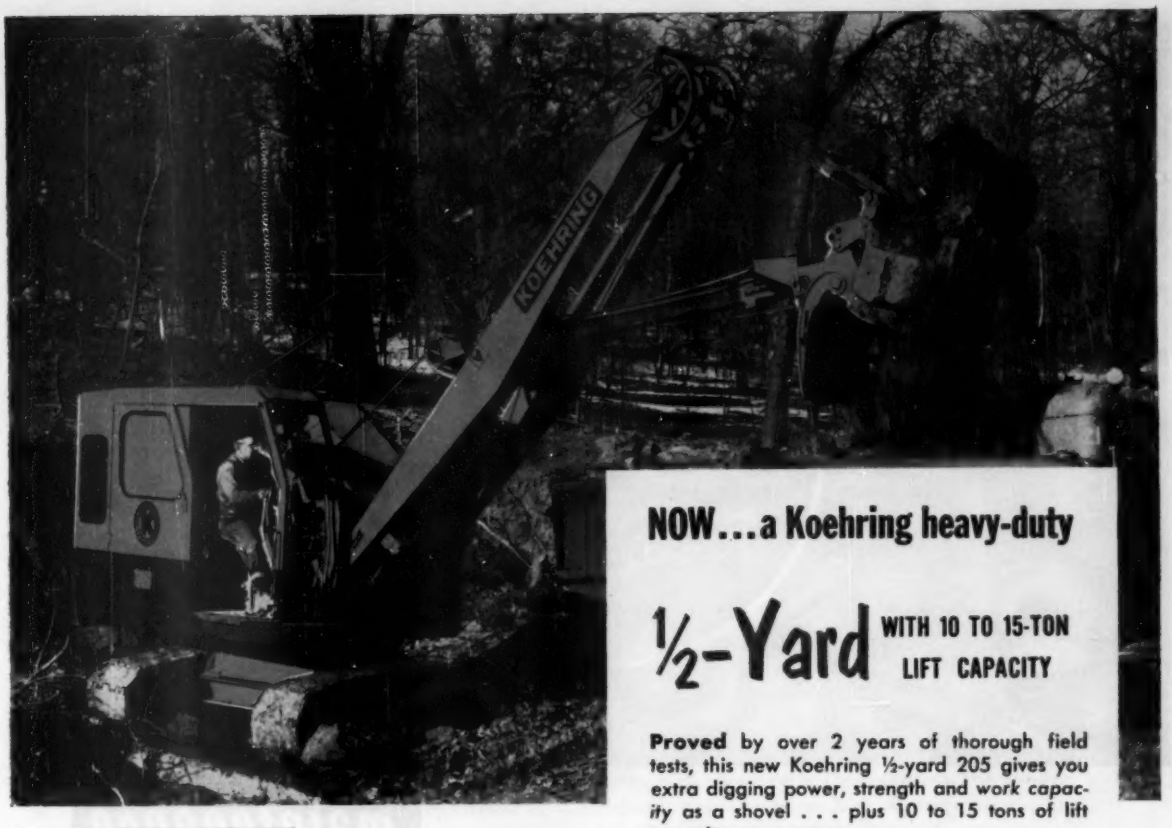
AVAILABLE FOR MOST ALL TRACTORS—One machine . . . convertible to perform two types of digging! This practical feature was first requested by owners of Shawnee equipment—Now it is fulfilled. It means greater economy and increased versatility—from digging long trenches 10" to 24' wide the machine can be converted to the clam for spot excavations (36-in. minimum) in just a few minutes time.

HYDRO-CLAM AS BACKHOE

HYDRO-CLAM WITH CLAM

Write for specifications and name of your dealer.

SHAWNEE Manufacturing Co., Inc.
1947U N. TOPEKA TOPEKA, KANSAS



NOW...a Koehring heavy-duty

½-Yard WITH 10 TO 15-TON LIFT CAPACITY

Proved by over 2 years of thorough field tests, this new Koehring ½-yard 205 gives you extra digging power, strength and work capacity as a shovel . . . plus 10 to 15 tons of lift capacity as a crane.

16-foot box-section shovel boom, with 12-foot, 2-inch dipper stick mounted at deep mid-section of boom, provides plenty of strength for heavy-duty digging.

Full cable crowd at 85 feet per minute, retract speeds of 133 feet per minute, and electric controlled push-button dipper trip, maintain fast dig-and-dump cycles.

Big 20-inch clutch on crowd, 18-inch swing clutch, 14-inch clutch on boom-hoist and retract, are all self-adjusting.

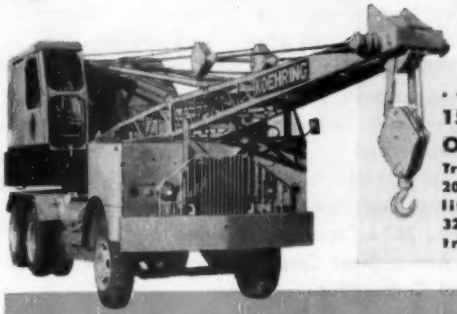
Carburized, hardened gears, splined shafts, and antifriction power flow on dig, swing and travel, assure smooth, dependable operation under maximum loads.

Only 2 major shafts in upper machinery . . . fewer parts, easier maintenance. Each shaft assembly is an independent unit.

Automatic traction brakes simplify operation. This important safety feature locks, holds 205 when working or parked.

Standard or extra-long crawlers on the Koehring 205 take 16, 20 or 24-inch shoes.

WITH ½-YARD HOE
205 digs 17¾ feet below crawlers. Also available as clamshell or dragline; handles ½ to ¾-yard buckets on wide work range. Lifts up to 10 tons as a crawler crane.



. . . LIFTS 15 TONS ON RUBBER
Truck-mounted 205 has 15-ton lift capacity, 32½ m. p. h. travel speeds.

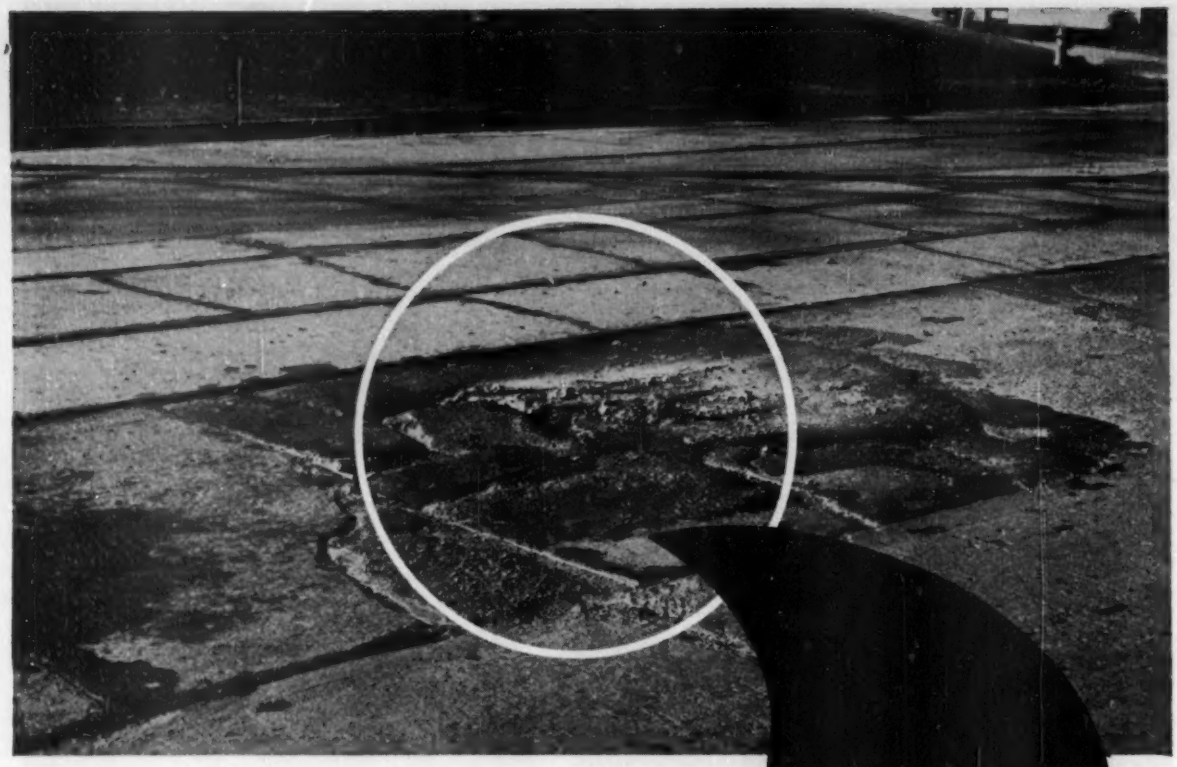
Before you invest in any excavator or crane, be sure to see your Koehring distributor about this new 205. Call him today, or write →

KOEHRING COMPANY

Subsidiaries: KWIK-MIX • PARSONS • JOHNSON

To: KOEHRING COMPANY, Milwaukee 16, Wisconsin
Send us bulletin on new ½-yard, 15-ton 205.
NAME _____ TITLE _____
DIVISION _____
STREET _____
CITY _____ STATE _____

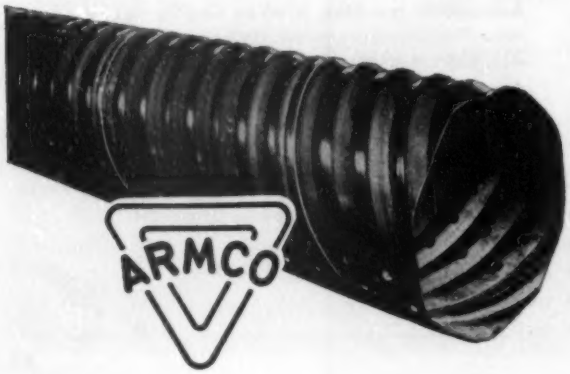
AC



How do you treat this maintenance headache?

What do you do when street and road surfaces fail? Patch them? Resurface? Rebuild? Actually, none of these is a permanent cure unless you *also* remove the cause of the trouble. Experience proves that in four out of five cases, the underlying cause of surface failures is excess water in the subgrade.

You can remove unwanted water once and for all with the help of Armco Perforated Pipe. Installed at the correct depth and location, a subdrain of Armco Pipe will keep the subgrade dry and stable and stop costly maintenance.

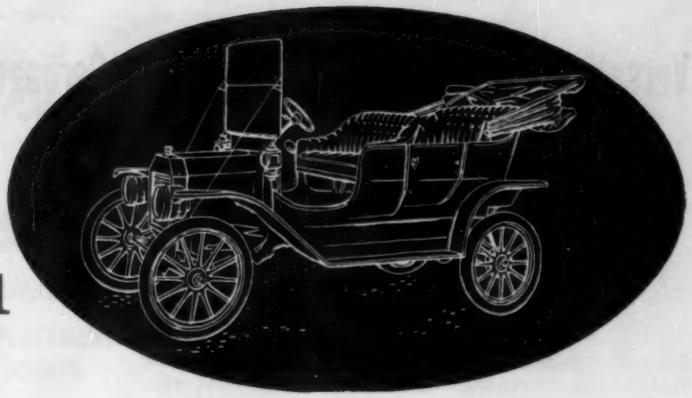


Scientifically-placed holes in the pipe admit water, yet exclude solids that would clog the line. And there's no danger of cracking or crushing. Armco Pipe has the flexible strength of corrugated metal design to assure long, trouble-free service. Coupling bands, formed to fit the pipe corrugations, keep joints tight and pipe in alignment.

Installation is quick and easy—costs are low, too. A small crew can do the job quickly with ordinary hand tools. Long, 20-foot sections mean fewer pieces to handle—fewer joints to make. Two men can readily lift, set in place, and join each section.

Write us for complete information about saving the surface with Armco Perforated Pipe. Armco Drainage & Metal Products, Inc., 2634 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. Export: The Armco International Corporation.

ARMCO Perforated Pipe



Would you keep on repairing a 1912 car?

There are many thousands of meters purchased thirty or more years ago still in service. They are being periodically repaired—frequently rebuilt from the old meter case up. This practice can impose a tremendous burden of trouble and expense on a water utility, especially at today's higher labor rates.

Many management men, with an eye towards costs, know these facts. They know that a new Rockwell meter will measure 95% of the ¼ gpm or smaller flows as against 90% or less for a repaired meter. They realize that if the cost of repairing an old meter amounts to half the cost of a new meter, they are better off to buy a new one.

Here at Rockwell we've worked constantly for improvement and our meters show it. They will measure at top accuracy for longer periods at lower costs. You can buy them with full confidence in their ability to cut your operating and maintenance costs and increase your revenue.

The Symbol for Service, Quality and Performance in Water Meters

ROCKWELL MANUFACTURING COMPANY

PITTSBURGH 8, PA. Atlanta Boston Chicago Houston Los Angeles N. Kansas City New York Philadelphia Pittsburgh San Francisco Seattle Tulsa

In Canada: Peacock Brothers Limited

Versatile Tractor Shovel Disposes of Garbage, Handles Other Jobs for Evansville, Wis.

by BRADEN E. WOLFF
Superintendent of Streets, Evansville, Wis.

The HD-5G Tractor Shovel with 1-yd. bucket spreads refuse in old gravel pit, which was previously a dangerous menace.

Like thousands of other towns, we must buy equipment that can handle a wide range of jobs, because we operate on a limited budget and often cannot justify the purchase of a machine just to handle a certain job. The equipment versatility we seek is typified by an Allis-Chalmers HD-5G, 1-yd. Tractor Shovel, which we bought primarily for garbage and rubbish disposal but which we use for other jobs, too.

The Sanitary Landfill system of disposal is used in our town because of its economy, safety and benefit in recovering otherwise useless land. Refuse is picked up by a 10-yd. garbage truck and an open truck, and is hauled to an old gravel pit covering about three acres on the edge of town. The tractor shovel spreads the material, compacts it by traveling over it and then covers the refuse with dirt or sand. The landfill can be built up in successive layers until the level is the same as that of surrounding land. Cover material consists of street sweepings, discarded foundry sand, and overburden from a sand pit adjacent to the landfill.

It is estimated the old pit now being used will provide disposal capacity for three or four years. When filled, this one-time menace will be used for a playground. There are other pits nearby that also will be put to such double use — first a means of refuse disposal, then a site for healthful playgrounds for the community. Needless to say, citizens and town officials are very happy with the new system.

We find that our collection equipment can handle Sanitary Landfill operations efficiently in a total of two days a week. The remainder of the time, the tractor shovel is available for sidewalk and street work. It is used for both construction and maintenance, as well as stockpiling, loading — in fact, any jobs there are to be done. It either travels from job to job by its own power or is hauled on a trailer behind one of the trucks.

★ ★ ★

Counties, cities and towns throughout the country are finding Allis-Chalmers Tractor Shovels the ideal machines for all-round work. They are always busy because they do so many jobs so well. Usefulness is further widened by a variety of quick-change attachments for the HD-5G, including 2-yd. bucket for snow, coal and other light materials; trench-hoe for digging trenches and foundations; blades for dozing; and rear-mounted scarifier for breaking up old surfacing and for more efficient excavating.

See the HD-5G and the three larger size tractor shovels at your Allis-Chalmers dealer's. Let him show what they can do on *your* job.

After packing material well with its 16,200 lb. of weight, the tractor shovel carries fill from nearby pile and spreads it to completely cover refuse.

Portion of pit in foreground has already been filled to level of surrounding land. Pit in background is yet to be filled. Land will be used as a playground as it is filled in.

ALLIS-CHALMERS
TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

LOOK JOE! SAW CONCRETE & ASPHALT WITH A... Clipper CONSAW

The photos below illustrate typical concrete and asphalt removal practice now being employed by hundreds of Utilities, Municipalities, Contractors and Maintenance Crews in Streets, Floors and Sidewalks. The benefits include lower maintenance costs, lower installation, repair and replacement costs.

SAVES-

...UP TO 50% on REMOVAL TIME

...UP TO 50% on REPLACEMENT COSTS

MODEL C-130—One of 5 Models—Gas or Electric Powered.

...by the ORIGINATORS OF CLIPPER MASONRY SAWS

...the First and Only saw in the world that will cut every masonry material regardless of size and hardness. Clipper outperforms them all for ONLY Clipper is "CONVERTIBLE" and has the Exclusive-Patented Features for **flexibility.** A Clipper model to fit any job—any budget. Sold on FREE TRIAL... Priced from $265.

CUT COSTS by Sawing Contraction Joints—Trench and Patch Openings in Concrete & Asphalt

Save up to 50% in labor and material. Saw repair patches—water, gas, sewer and air line trenches in floors, streets, walks, highways. Save too, by sawing contraction joints in floors and highways...eliminate costly hand forming and spalling.

"4 OUT OF 5" BUY CLIPPER CONCRETE SAWS. Three-Point Suspension holds the blade straight and true in the cut—eliminates binding—twisting—drifting—sidewear and friction. The patented water application assures adequate coolant at all times—Increased blade life and speed. Perfect balance and Dashboard Controls for operating ease and maneuverability.

Experience Proves a Concrete Saw Must Have These Clipper Features for MAXIMUM ECONOMY

3-POINT SUSPENSION | WATER SPRAY SYSTEM | INSTANTLY MANEUVERABLE

FREE TRIAL ON YOUR JOB!

This unqualified Clipper guarantee of satisfaction is backed by Nearly 20 Years of world-wide experience, the ability to select the finest materials and the "know-how" to put them together. ORDER TODAY...on FREE TRIAL. Discover for yourself how Clipper will increase your profits!

WORLD'S LARGEST MANUFACTURER OF MASONRY AND CONCRETE SAWS

Quality is Consistent... Economy Certain with **CLIPPER SUPERIOR DIAMOND BLADES**

...guaranteed to..."Provide the fastest cut...at the lowest cost...with the greatest ease!" Clipper alone can supply every necessary metal bond... in over 36 specifications.

Clipper

SAME DAY SERVICE FROM YOUR NEAREST FACTORY BRANCH—

KANSAS CITY 8, MISSOURI

COAST TO COAST

• PHILADELPHIA	• BOSTON	• SAN FRANCISCO
• ST. LOUIS	• HOUSTON	• CINCINNATI
• CLEVELAND	• MILWAUKEE	• ATLANTA
• DETROIT	• ST. PAUL	• WASHINGTON, D.C.
• AUSTIN, TEX.	• INDIANAPOLIS	• BIRMINGHAM
• CHICAGO	• NEW YORK	• CHARLOTTE, N.C.
• LOS ANGELES	• PITTSBURGH	• DALLAS
• NEW ORLEANS	• DENVER	• KANSAS CITY

IN CANADA—P.O. BOX 476, WINDSOR, ONTARIO

MAIL COUPON NOW

SOLD ONLY DIRECT FROM FACTORY BRANCHES

CLIPPER MANUFACTURING CO.
2813 N. WARWICK • KANSAS CITY 8, MO.

Send FREE Literature and Prices on:

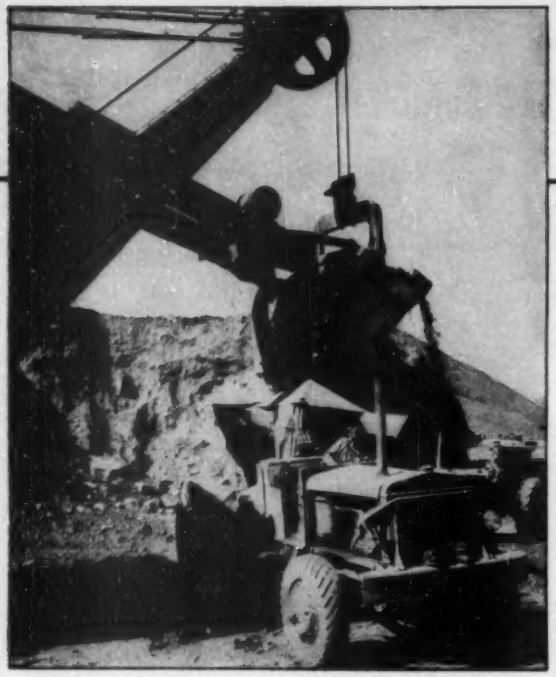
☐ CLIPPER CONSAWS ☐ CONSAW DEMONSTRATION
☐ CLIPPER MASONRY SAWS ☐ CLIPPER DIAMOND BLADES

11-C

COMPANY_____

ADDRESS_____

CITY_____ STATE_____



SPECIFICATIONS SHOULD REQUIRE

CONSTRUCTION BONDS

Ask for . . .

NATIONAL SURETY CORPORATION

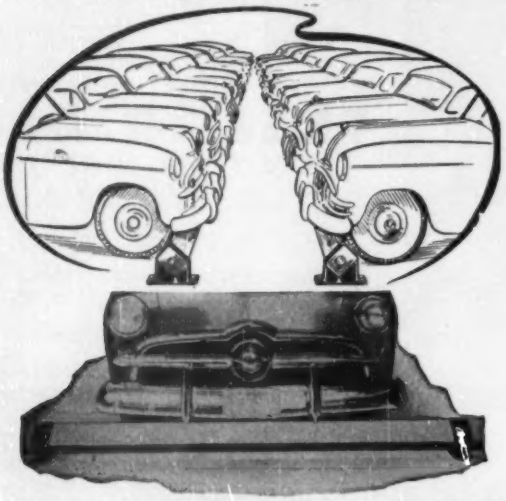
NEW YORK

one of America's foremost surety companies

INVISIBLE ARMOR

This symbol on your bond or policy guarantees satisfaction.

IDEAL FOR "OFF THE STREET" PARKING
WITH OR WITHOUT PARKING METERS



SALIENT FEATURES OF HAR-BAR BARRIERS

1. High enough to stop your car.
2. Low enough to clear your bumper guards.
3. Barrier is above ground — no drainage problem.
4. Barrier is above ground — no rotting of wood.
5. Automatically spaces your cars.
6. Follows contour of your ground.
7. Easily installed — just line up and drive the anchor pins.
8. Easily moved — just pull the anchor pins.
9. Easy to clean under.
10. Easy to maintain.
11. Installed on any kind of surface — black top, cement, ma adam, gravel or cinders.
12. It really dresses up your parking lot.
13. You always stop against your tire — no shock.
14. All Castings are aluminum — no rusting.

Send us a plot plan of your parking lot—we do the engineering free.

HARRIS - BARRIER INC. 5407 N. PENNSYLVANIA STREET INDIANAPOLIS 5 - INDIANA

"FAMOUS NAME"

To Francis Scott Key, composer of our national anthem, Frederick, Maryland was home. There he practiced law; there he is buried. On U.S. Route 40, where it passes through Frederick, a modern hotel honors the patriot's famous name.

In many interesting locations you'll find ***FERRO*** signs . . . visible day or night; permanent porcelain enamel fused on finest steel.

On any street, road or highway, ***FERRO is the sign of good government.*** For full details, write:

FERRO ENAMELING CO.

1100 Fifty-Seventh Avenue Oakland 21, California

PARK-O-METER
preserves downtown property $ values

This midtown parking lot in Waterloo, Iowa, is one of nine well distributed metered lots providing off-street space for 463 cars right downtown where they *build business and preserve property values.*

Site for latest lot #10 has been acquired. Additional lots are planned. Original lots were financed from meter revenue and a small tax levy. During the last two years *expansions have been covered by meter revenue alone.* 1507 Park-O-Meters are now working in Waterloo to provide efficient, revenue producing regulation according to the needs of each area.

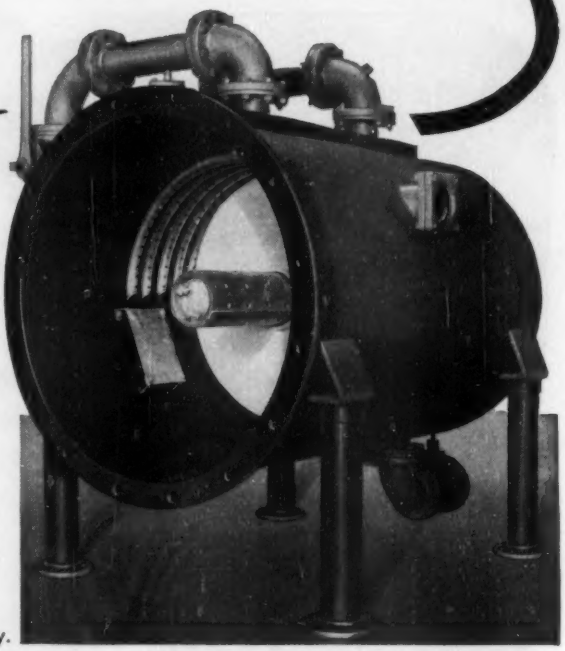
If you would know what a modern parking meter system should do, write, wire or telephone us.

PARK-O-METERS MEET TODAY'S NEEDS:

1. Operate reliably on Pennies, Nickels, Dimes and Quarters . . . all through the single coin slot
2. Fully accumulative
3. Fully automatic
4. Convertible to meet every requirement

Magee-Hale
PARK-O-METER COMPANY
OKLAHOMA CITY 1, OKLAHOMA

A new trend in municipal water filtration—
The SPARKLER DIATOMITE FILTER MODEL SCJ
has been highly successful in installations now in operation



Reduced operating cost due to long filtering cycles and fast backwash cleaning, together with a remarkably low bacteria count requiring a minimum of chlorination, are features that make this new type filter worthy of the attention of all waterworks engineers.

Practically any volume of city water can be filtered economically in the Sparkler SCJ filter. Single units capable of handling 5,000,000 gallons of water a day are available. Multiple units can be engineered into a system for larger requirements.

Less than 0.2% of water is required to backwash and clean the largest filter units and a complete fresh precoat of diatomite can be applied and the filter ready to resume operation in 15 minutes.

Operators can be easily trained, no highly skilled specialized personnel is required to insure efficient performance.

Write for plans and prices on your requirements. Address Dan Baldwin for personal service.

SPARKLER MANUFACTURING CO.

Home office and plant, Mundelein, Ill.

EUROPEAN PLANT
Prinsengracht 876
Amsterdam, Holland

CANADIAN PLANT
Galt, Ontario

Manufacturers of industrial filters for over a quarter of a century.

White Heating Kettles Have Fire-Proof Tops

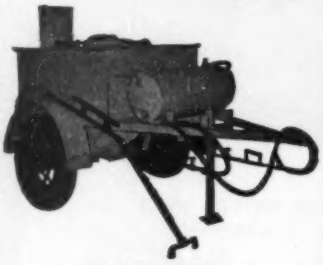
Cut-back and highly inflammable road repair material can be heated safely in White kettles. FIRE-PROOF top reduces fire hazard.

White asphalt and tar kettles are extensively used. They give long life and satisfaction.

Plain kettles or with hand or engine driven spray pumps for patching pavement. Thermometer, barrel hoist, warming hood extra. All oil burning. Semi-elliptic springs, pneumatic tires.

65, 110, 165, 220, 300 gallon capacities.

Model F-10 is oil jacketed, to heat elastic joint filler.



Other Products

CONCRETE VIBRATORS
Gasoline Engine and Electric Motor Driven Models

FRONT END LOADERS
for Industrial Tractors

ASPHALT PLANTS
Portable—Stationary

KEROSENE TORCHES
3 to 20 gal. capacities

Write for Circulars and Name of Nearest Dealer

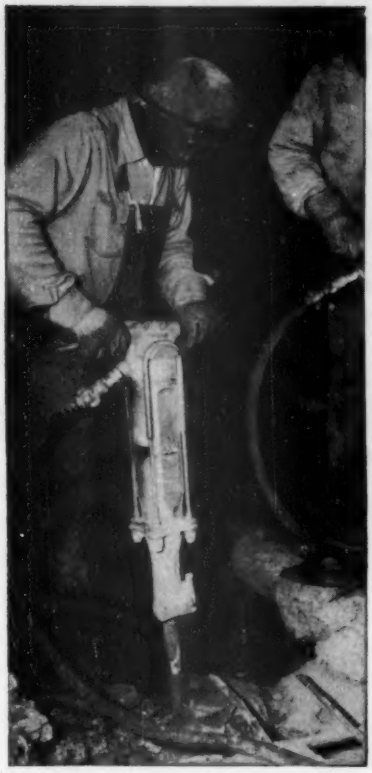
White Mfg. Co.

ELKHART 1 INDIANA

WORTHINGTON-GAMON

LIQUID METERS
All Sizes All Types

WORTHINGTON-GAMON METER DIVISION
Worthington Corp.
296 South Street Newark 5, New Jersey



JOY PAVING BREAKER WINS, CROWNED CHAMP

Recent impartial test proves JOY K-81 best breaker

There were no frills to this particular outfit's testing methods. To find the best Paving Breaker, they simply lined up all competing tools and let 'em go to it. In a matter of minutes, this acid test indicated which was superior.

Such a test is Joy's meat. For example, although the K-81 Paving Breaker is listed in the 82 lb. class, it beat all competition in the 85 lb. class, including machines weighing as much as 91 lbs!

The tests showed a clean sweep for Joy. Class for class, Joy Paving Breakers walked away with the ribbons.

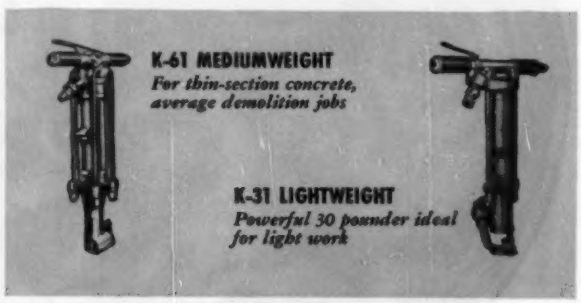
. . . AND NO WONDER JOY BREAKERS ARE TOPS.

Joy Breakers are cadmium-plated *inside and out* to stop rust and corrosion, prevent scoring, speed running-in. Lubrication is automatic—throttle movement sends a shot of oil to all working parts.

Joy Breakers operate with less jarring . . . that means less operator fatigue. There's less maintenance and replacement with Joy. Interchangeability of parts allows a smaller inventory.

Get the full story today. Write for descriptive booklets to **Joy Manufacturing Company, Oliver Building, Pittsburgh 22, Pa.** In Canada: *Joy Manufacturing Company (Canada) Limited, Galt, Ontario.*

K-89 SUPER HEAVYWEIGHT
90 lb. model for heavily reinforced concrete sections
K-81 HEAVYWEIGHT
Faster, heavier blows, easier to hold and operate


K-61 MEDIUMWEIGHT
For thin-section concrete, average demolition jobs
K-31 LIGHTWEIGHT
Powerful 30 pounder ideal for light work

DUAL-VALVE MAKES AIR DO MORE WORK!

Permits higher drilling speeds with lower air consumption. Cuts drilling costs.

Consult a Joy Engineer

W&D C5035

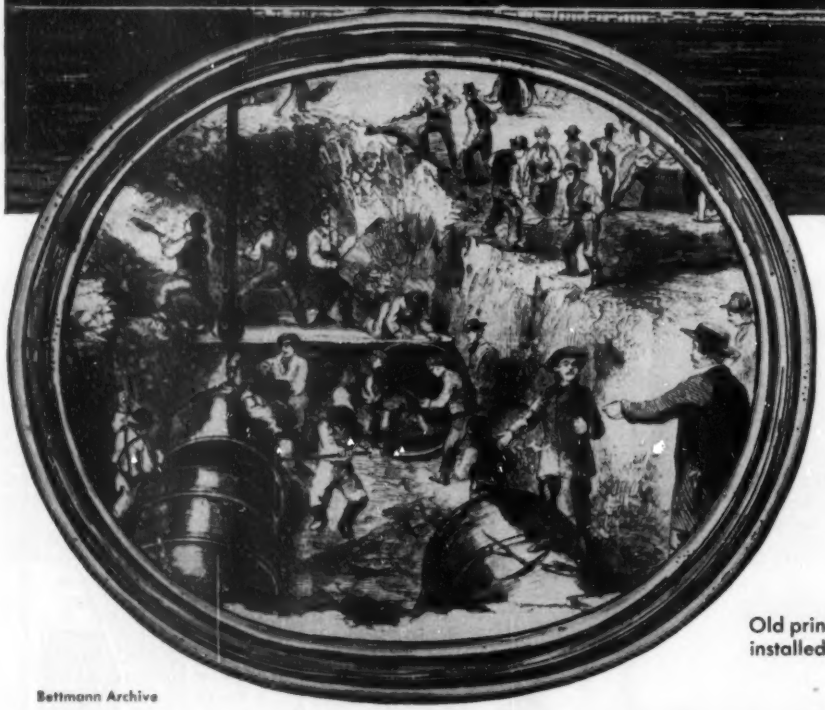
JOY

CONSTRUCTION EQUIPMENT MANUFACTURERS FOR OVER HALF A CENTURY

With 100 years

Ewing Galloway

This is New York, as seen from East River, showing Empire State, Chrysler and United Nations buildings.



Bettmann Archive

Old print showing cast iron water mains being installed in New York about 100 years ago.

MODERNIZED cast iron

of EXPERIENCE...
they must be right

NEW YORK installed cast iron water mains 100 years ago... and installs them today!

One hundred years ago, New York was a city of about 750,000 population, served by 237 miles of water mains. Today's eight million population requires 5500 miles of mains, of which 98% are cast iron. Some of these mains are still functioning after a century and more of service. From 90 M.G.D. a century ago, capacity has grown to 1500 M.G.D.

A customer who buys your product year after year—generation after generation—is a "jewel beyond price". Be you merchant or manufacturer, you might count such customers on the fingers of your two hands. Yet, the cast iron pressure pipe industry can count more than 60 of them—utilities that have been buying cast iron pipe for water or gas mains (or both) for 100 years.

Cast iron pipe has been a rugged, long-lived product from the earliest days. Today's *modernized* cast iron pipe, centrifugally cast, is even stronger, tougher, and more uniform in quality. And, where needed and specified, it is centrifugally lined with cement mortar to assure sustained carrying capacity throughout the long life of the pipe.

Cast Iron Pipe Research Association, Thos. F. Wolfe Managing Director, 122 So. Michigan Ave., Chicago 3.

In good condition after 100 years of service, this cast iron distribution main is one of several still functioning in New York City.

CAST Q IRON ®

The Q-Check stencilled on pipe is the Registered Service Mark of the Cast Iron Pipe Research Association.

pipe FOR MODERN WATER WORKS OPERATION

PROTECT YOUR TREES

from pests and pestilence with

John BEAN *ROTOMIST*

Fast, thorough, and dependable protection for shade trees, parks and recreational areas is a simple matter with the new John Bean Rotomist. Completely re-designed, this new unit offers more performance-per-horsepower than has ever before been possible because of the new "straight-through" method of air handling. Powered by a famous Willys "Jeep" engine, the air delivery unit has a 29-inch axial flow fan which delivers 28,000 cubic feet a minute at 100 miles velocity.

Accurate "on-target" delivery is easy with the airplane-type hydraulic controls that rotate the turntable 360° right or left and aims the counter-balanced discharge outlet through a 110° arc.

The spray system includes the new John Bean Royalette enclosed oil-bath, plunger-type pump that delivers 7 gallons per minute at 400 pounds pressure; cone type nozzles that are easily detached to allow adjustment to the desired flow; a 100-gallon tank made of heavy gauge steel, and triple-jet agitation in the tank.

The unit is available for either truck or trailer mounting, or can be purchased in a factory mounted trailer model.

Write for the new Rotomist catalog for more complete information.

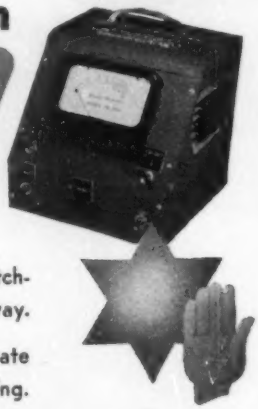
fmc

John BEAN

DIVISION OF FOOD MACHINERY AND CHEMICAL CORPORATION

LANSING 4, MICH. • SAN JOSE, CALIF.

THE Ametron SPEED METER



takes the guessing out of catching the speeder on the highway.

It tells at once the exact rate at which the driver is traveling.

Takes only a few minutes to set up. So simple its maintenance cost is very low. So compact it is easily portable. Best of all—its low cost will surprise you.

Police officials who have tried it out are enthusiastic over its effectiveness.

Write for illustrated brochure

STANDARD OF ACCURACY SINCE 1888

STREETER-AMET COMPANY

4101 RAVENSWOOD AVENUE • CHICAGO 13, ILLINOIS

Branches in Pittsburgh, Pa., Allentown, Pa. and Birmingham, Ala.

GAS Storage Tanks

• Whether you want conventional high-pressure units or something *special*—send us your inquiries. COLE can build you the kind of high-pressure tanks or vessels you require—any size, any shape, any metal. Our experience (of almost a century) in the design and fabrication of metal tanks may be of help to you. Write for catalog—"Tank Talk."

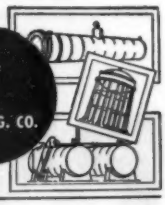
Established 1854

R. D. COLE MFG. CO.

NEWNAN, GEORGIA

ELEVATED TANKS • VESSELS • CYLINDERS

TOWERS • BINS • STANDPIPES



It's easier, simpler, faster!

It's the BURROUGHS TAX ACCOUNTING MACHINE

that computes . . . as it types . . . as it posts!

This Burroughs is the only typewriter-accounting machine with direct multiplication. In *one operation* it—(1) multiplies, (2) computes and totals tax installments, (3) writes records, tax receipts, bills, (4) accumulates column totals.

It multiplies any tax rates, constant or variable. The operator merely enters the valuation . . . the machine automatically computes the answer to the nearest cent and posts factors and answer to tax bill, receipt and tax roll. These features greatly reduce the operator's work and virtually eliminate the chance for human error.

Any tax accounting problem, no matter how complicated, can be handled with remarkable speed, ease and simplicity by the Burroughs Tax Accounting Machine.

This Burroughs is a versatile machine . . . versatile enough to handle *all* of today's tax accounting problems . . . versatile enough to be readily adapted to any foreseeable changes in tax accounting requirements.

To find out how Burroughs Tax Accounting Machines can be applied to your problems, call your local Burroughs office, or use the coupon.

WHEREVER THERE'S BUSINESS THERE'S **Burroughs**

Send for your Copy of "New Speed, Ease, Simplicity in Tax Accounting." It explains in detail the versatility and flexibility of Burroughs Tax Accounting Machines.

Mail this coupon!

Burroughs Corporation
Detroit 32, Michigan

I would like to see a copy of "New Speed, Ease, Simplicity in Tax Accounting."

Name_____

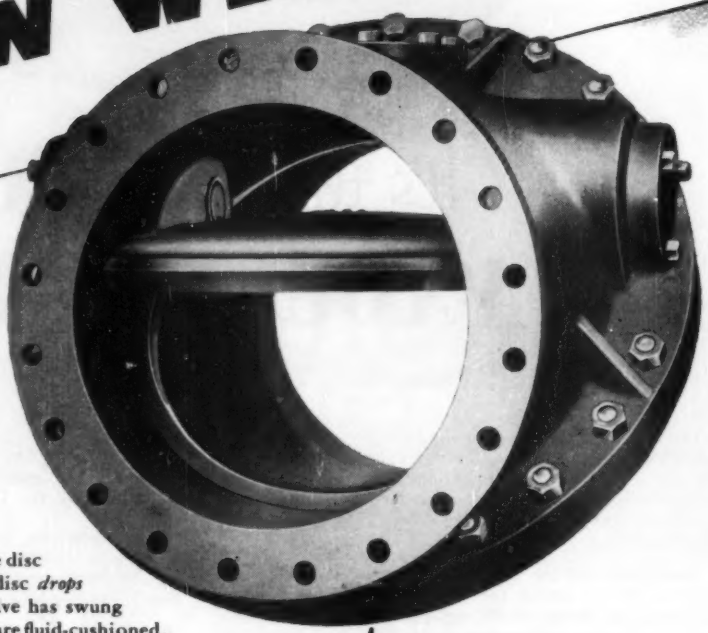
Department_____

Street_____

City_____ State_____

Only Chapman's *Tilting-Disc* Check Valves Give You...

NO SLAMMING
LOW HEAD LOSS
LOW WEAR



Here's the check valve that stays open with minimum flow resistance, closes fast without slamming, closes tight without sliding or scraping wear.

Cushioned Closing

Pressure against the upper part of the disc cushions it as it closes. Then the disc *drops tight* to its beveled seat after the valve has swung closed. Both actions are fast, but they are fluid-cushioned. Seating is quiet in all but unusual piping arrangements.

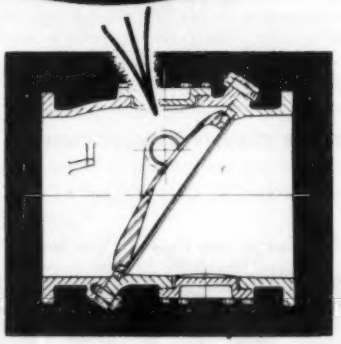
Low Flow Resistance

The streamline design of the valve body and disc eliminate turbulence and cut flow resistance. The fluid holds the disc tightly against its stops, without flutter. The body is larger around the disc, so the net valve area is at least as much as the pipe area.

Minimum Wearing Action

Because the disc *drops* tight, it doesn't slide against the seat. The wear on hinge pins is small because the disc doesn't flutter. Unusually husky construction in every detail means long life under the toughest conditions for Chapman's Tilting Disc Check Valve.

Full engineering and construction data are in Chapman's Catalog #30. Write for it now.



Here's Why CHAPMAN Tilting Disc Check Valves *Keep Quiet* All Their Lives

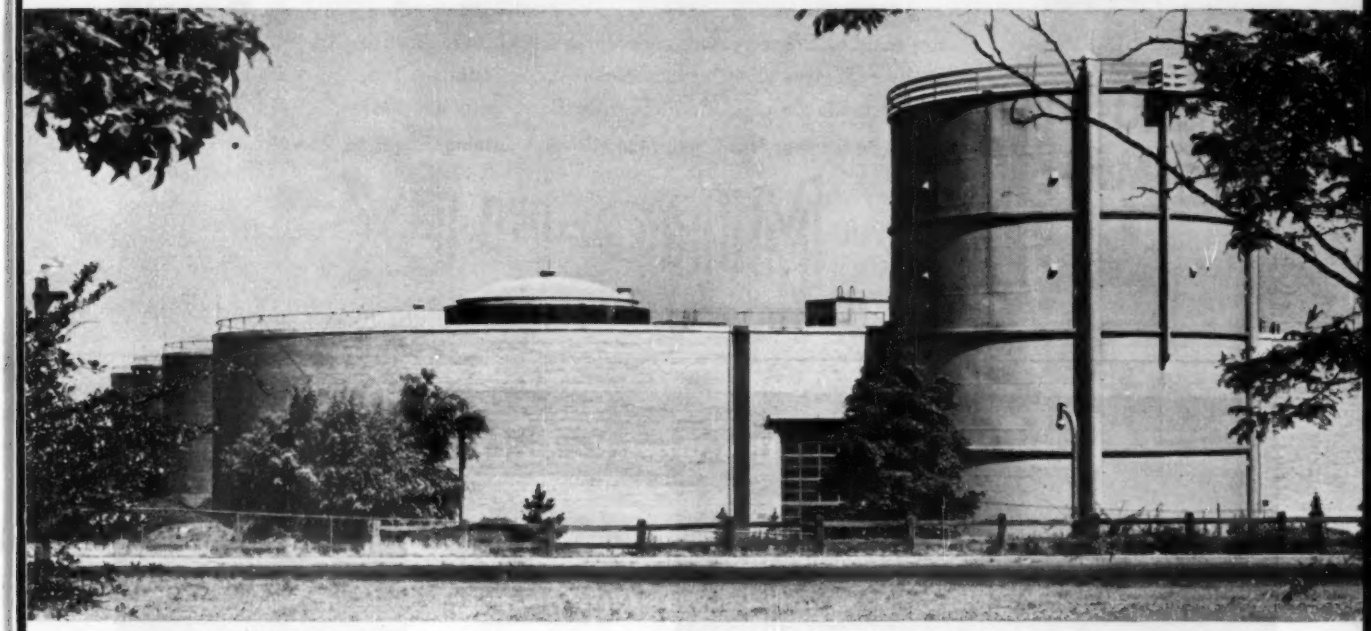
This specially designed "airfoil" disc balances perfectly in open position . . . then drops easily to closed position (cushioned by the flow). No jarring or slamming, in usual pipe-layouts. Write for bulletin.

The CHAPMAN VALVE Manufacturing Company
INDIAN ORCHARD, MASSACHUSETTS

GUIDES TO GASHOLDER PLANNING

IMPORTANT CONSIDERATIONS IN CHOOSING A GASHOLDER

"'Sore thumb' gas works hurt community relations . . .



How about a good-looking gasholder?"

Residents of an eastern city were aroused when word spread that a sewage digester gasholder was being planned in their neighborhood. They visualized a "sore thumb" superstructure with rigging looming high overhead, thought of property values skidding because they'd have an ugly, old-fashioned gas works as a new neighbor. Their protests posed a serious problem in community relations for the company.

The installation of a handsome, compact Wiggins Gasholder solved the problem to everybody's satisfaction. The only truly *modern* gasholder, the Wiggins gasholder is not only safe, efficient and economical but—due to its simplicity—it's also *good-looking. Dry* fabric seal and self-aligning piston eliminate unsightly exterior mechanisms required for other types of gasholders. For complete facts, write General American.

Wiggins Gasholder

WIGGINS VAPOR SEALS GENERAL AMERICAN TRADE MARK

GENERAL AMERICAN TRANSPORTATION CORPORATION

135 South La Salle Street • Chicago 90, Illinois • **Offices in Principal Cities**

MIRO-FLEX SIGNS SAVE LIVES

When you are emphasizing safety, your traffic control program calls for Miro-Flex signs. Split second legibility tells both the motorist and the pedestrian what dangers lie ahead. America's most complete sign line includes everything from street name assemblies and parking regulations to standard stop signs and railroad crossing warnings. They are plain embossed or are reflectorized by either glass or plastic buttons or by reflective sheeting or beaded background. All signs are made to meet standards of U. S. Public Roads Administration.

Write for Your Free Copy of the Miro-Flex Catalog, "Signs by Miro-Flex."

THE MIRO-FLEX CO., INC.

1824 EAST SECOND ST. WICHITA, KANSAS

GOLDAK makes the world's finest LOCATORS

THE *Dualtronic* COMBINATION PIPE & LEAK DETECTOR

The "Dualtronic" is acclaimed by Municipalities and Utilities throughout the world, because of the time and labor savings effected by one instrument doing the work of two so efficiently and effectively. Ruggedly built! Lightweight! One man operation! The "Dualtronic" is the answer how to cut costs 50%!

Lightweight! Rugged!

GOLDAK

FEATHERWEIGHT MODEL 87 PIPE LOCATOR

Guesswork eliminated. Pinpoint location of pipes, mains, gates, tees, etc. One man operation, total weight 11 lbs.! Strong, positive location signal guaranteed by Licensed circuits and Microtuning, exclusive with Goldak. Lasts a lifetime, guaranteed performance.

Write for FREE literature!

The GOLDAK Company

Leading Makers of PIPE LOCATORS Since 1933

1544 W. GLENOAKS BLVD.
GLENDALE 1, CALIFORNIA

FASTEST, EASIEST WAY TO LOAD MATERIAL FROM STOCK PILE INTO TRUCKS

BARBER-GREENE BUCKET LOADERS

No other machine, no other method can equal the speed and efficiency of Barber-Greene Bucket Loaders in loading sand, gravel, and other similar bulk materials from stock piles and storage areas into trucks. At rates up to 3 cubic yards per minute, these loaders dig, lift and convey bulk material in one continuous high capacity flow, virtually eliminating truck waiting and driver waiting time. Simple to operate, easy to understand. The truck driver can operate the loader to load his own truck. Backed by over 1,000,000,000 yards of material handled by Barber-Greene Loaders, they represent the ultimate in low-cost loading efficiency.

A TYPE THAT WILL DO YOUR JOB BEST

MODEL 543

This self-propelled loader is mounted on a tractor-type chassis and pneumatic tires for traveling from job to job at rates up to 15 m.p.h. Equipped with a hydraulic swivel conveyor, it has the reach to load highest trucks, long trucks and trailers, and trim the load to full capacity every time. Capacity—3 cubic yards per minute. Easily converted for loading coal or snow.

Send for catalogs!

Complete and detailed information on the Model 543 and 82A is contained in individual catalogs available at your request. Ask your Barber-Greene Distributor or write directly to the address below.

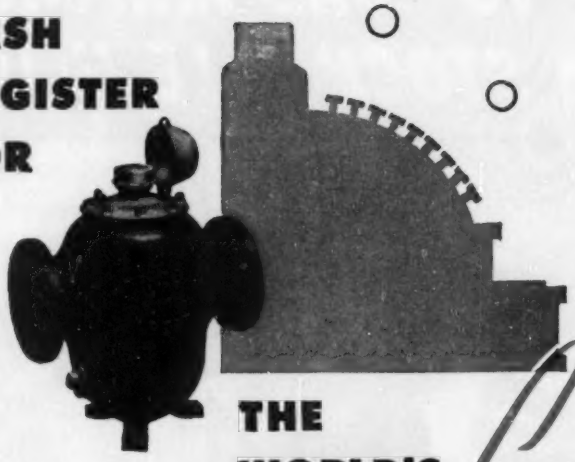
MODEL 82A

This crawler-mounted, 3 cubic-yard per-minute Bucket Loader has the stability so often necessary in typical truck loading operations—in pits, on soft or rocky ground, etc. Built for heavy, continuous operations, it is economical enough to justify itself in intermittent service. Complete accessories are available, including single and double deck vibrating screens for loading, screening and scalping simultaneously.

Barber-Greene

Aurora, Illinois, U. S. A.

CASH REGISTER FOR THE WORLD'S *Largest* INDUSTRY



Over 21-*billion* tons of water are collected, processed, and distributed every year. That's over ten times the combined output of the next four leading industries... coal, farm products, oil, and steel.

All these five largest commodities have one thing in common:
They come from the ground, and cost good money to collect, process and deliver before they are of much use to man.
Like these other commodities, water must be paid for... by each user, according to quantity consumed.

Making these payments fair and accurate has been the job of Trident Meters for over 50 years. During this period, Tridents have become famous for their sustained accuracy, reliability, and long service. More Tridents have been installed in the United States than any other meter.

The experience and know-how behind this record is yours for the asking. Simply call or write your nearest Neptune Branch Office.

NEPTUNE METER COMPANY
50 West 50th Street, New York 20, N. Y.

NEPTUNE METERS, LTD.
1430 Lakeshore Road, Toronto 14, Ontario

Branch Offices in Principal American and Canadian Cities

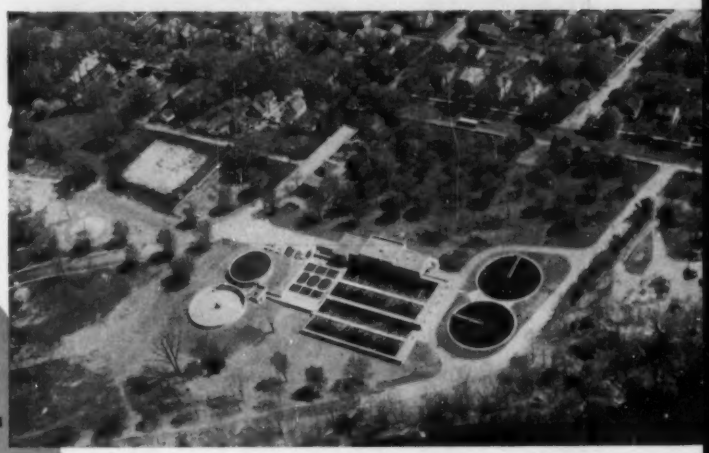
neptune

249

Mishawaka, Ind., makes

Economies in SEWAGE TREATMENT Construction

By RALPH J. BUSHEE
Charles W. Cole & Son
Engineers and Architects
South Bend, Ind.



The plant is a compact structure, close to residences.

THE ST. JOSEPH RIVER rises in south central Michigan, flows south into Indiana, turns west and then north back into Michigan, and empties into Lake Michigan between St. Joseph and Benton Harbor.

Along the 30-mile south loop of the river lie three Indiana cities: Elkhart, Mishawaka, and South Bend. Pollution of the river by the untreated sewage from these cities has caused vigorous complaints by the downstream Michigan cities. These three cities have, for some time, been under orders from the Indiana State Board of Health to cease the pollution. All have made some progress; only Mishawaka has completed its sewage-treatment project.

According to the 1950 census, sewage is contributed by 32,913 inhabitants of Mishawaka. Industrial wastes are produced by a medium-sized packing plant and a rubber company. Wastes from the latter consist largely of wash water and spillages from the manufacture of foam-rubber products. The total equivalent in population of the domestic sewage and industrial wastes is estimated to be 52,000. The plant is designed to treat sewage contributed by a population of 66,000, making a reasonable allowance for growth.

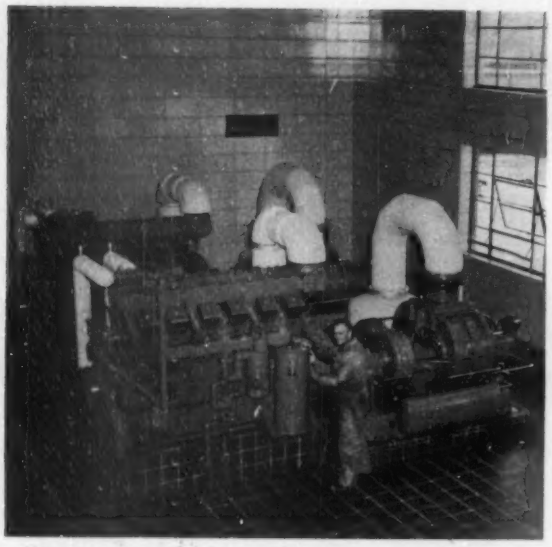
The Indiana State Board of Health required Mishawaka and South Bend to remove only 70% of the polluting material from the sewage. However, it is probable that in the not-too-distant future more complete treatment will be required, so bids were taken for additional units which would remove 90% or more of the contaminating substances. The cost of the additional units is 8% of the cost of the sewage treatment, or 3.2% of the total cost of the project.

The plant that the city has built is of the activated-sludge type, with separate digestion of the sludge. Special conditions which affected the design are the excessive amount of ground water in the sewage, and the absence of an isolated location for the plant.

Infiltration Eases Treatment Problems

Of the total flow of 8 mgd (million gallons daily) to the treatment plant, 5 mgd, or 63%, is from infiltration into the sewers. In the flat area south of the river, the ground-water level was originally only 2 or 3 feet below the surface. To lower this level and permit construction of basements, the sewers are laid with open joints.

While this large amount of water increased the size and cost of certain units in the treatment plant, it is not without compensations. A weak, cool sewage seldom



Digester gas, fuels engines to eliminate power-plant costs.

produces that voluminous, poorly settling sludge which keeps activated-sludge plant operators from enjoying the summers. The lower temperature and the additional dissolved oxygen of the infiltrating water gives assurance of freedom from the strong odors which occur when oxygen has been exhausted from sewage. For complete control of odors, chlorine is added to the incoming sewage by a Wallace & Tiernan chlorinator, and special attention is given to cleanliness.

City Park Only Site Available

Because of the proximity of South Bend at the downstream end of the Mishawaka, the only site available for the treatment plant was a city park on the river in the west end of the city. Space here is limited, with residences located 300 feet to the south and 700 feet to the north. The children's playground, wading pool, and ball park had to be preserved. Also, summer breezes would pass from the plant to a residential development.

Objections to the proximity of the sewage plant were removed by the construction of an attractive, semi modern building, with walls of split-faced limestone. The building, galleries, and walls effectively screen the tanks from the front and sides.

Trees hid the plant from view during the summer months. However, neighbors found the structure so attractive, that the lower branches of the trees were removed.

The public can get a good view of the final settling tanks and the plant effluent, and a glimpse of the aeration tanks. A visitors' gallery is maintained so that the public can observe the operation of the blowers and pumps. The pump and blower room has terra cotta walls and quarried tile floor. In the rest of the plant, the interior concrete walls are covered with a cream-colored concrete paint.

To remove sand without an excessive amount of organic material, the sewage flows through two 76-foot-long channels or grit chambers. The chambers are equipped with venturi flumes at the outlet ends which vary the depth with the flow so that a 1-foot-per-second velocity is maintained. The settled sand is removed from the chambers to a hopper by means of chain-driven bucket conveyors. A screw at the bottom of the hopper conveys the grit directly to the truck or, on reversing, to a jig-type grit washer to eliminate the stench of unclean grit. Screens, grit-removal, and washing equipment were supplied by Jeffrey Manufacturing Company.

Close-Coupled Design

Economy in the plant's construction begins with its design which is of the close-coupled type; that is, it has rectangular tanks and as many common walls as possible. The basement of the main building shares a wall with a side wall of the aeration tanks. The walls between the primary tank and the aeration tank form a pipe tunnel and passage to the digestion-tank control building. The advantages of this design are: lower first cost, due to savings in concrete and form work; less step-climbing for the operators; all piping is confined to basements and tunnels; improved appearance; economy in space; and better safeguards for the public.

Long-range operating economy has been built into the plant's air system. To supply air for the activated-sludge process, two duplicate, positive-pressure Roots-Connersville blowers, driven by Climax gas engines, were installed. The engines use gas collected from the sludge-digestion process. Additional gas that is needed is purchased from the Public Service Company.

An electric, motor-driven blower for standby purposes would have cost considerably less for the unit itself, but, after adding the costs of wiring, electric controls, and transformers, the saving would have been very small. The use of gas relieved the treatment plant of a standby charge for electric power not used; and the city-owned electric utility was freed of a spasmodic load, which might occur at an inconvenient time.

The gas-driven units will deliver any amount of air from half to full capacity with good efficiency over the entire range of operation. This flexibility is especially important for a smaller plant which has only one or two units. Gas is also used for heating the buildings; and, in the summertime, when this load is absent, a gas-driven pumping unit is used.

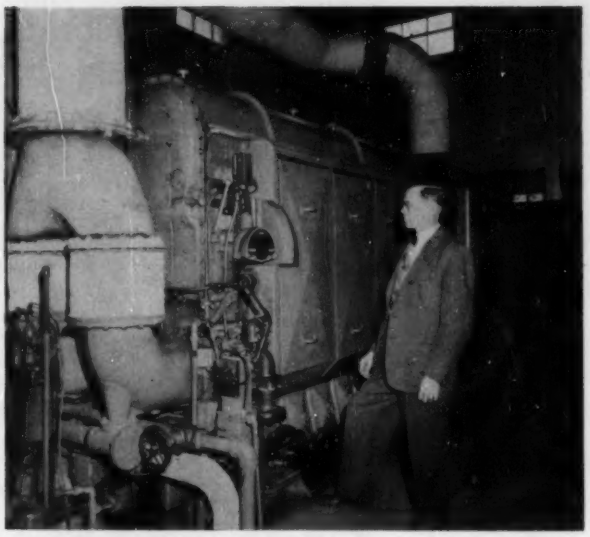
Where possible, preference has been given to a minimum number of larger units, even at the loss of some

(*Continued on page* 154)

F-M centrifugal pumps lift sewage into the treatment units.

A Switch to Natural Gas

By ENOS PURCELL
Superintendent of Water and Electricity
Herington, Kans.



Superintendent Enos Purcell checks the operation of plant engines.

The municipal electric plant at Herington, Kans., switches to the use of natural gas in powering its dual-fuel engines and cuts costs in half

BY SWITCHING from diesel fuel to natural gas, the Herington municipal electric plant has cut its cost of fuel and lubricating oil in half. The saving is making it possible for the plant to boost its cash contribution to the city's general fund, and retire, in three years, a 10-year revenue bond issue that financed a modernization program. Power earnings also enable the plant to maintain its policy of paying for the city's sewage-treatment plant, water plant, and street-maintenance equipment.

Dual-Fuel Engine Installed

Herington, a city of 4,500 in central Kansas, undertook the change in plant operation in 1951 when the city installed a new Fairbanks-Morse opposed-piston, dual-fuel engine to give the plant badly needed additional capacity. The engine has 10 cylinders and is rated at 1,600 hp at 750 rpm. A second, dual-fuel F-M engine was converted from full diesel operation to dual fuel in the same year. This engine is rated at 1,200 hp at 300 rpm. Three smaller diesels complete the list of prime movers used in the plant. Together the dual-fuel engines handled 95½% of the plant's total load in 1952, supplying a peak of 1,325 kw.

The opposed-piston engine carried 84% of the total load; the converted unit, 12%; and the remaining three oil engines, 4%. Jointly they generated over 6,000,000 kwhrs of electricity at an average fuel and lube cost of 3.47 mills per kwhr. This compares with a fuel and lube cost of 7.8 mills per kwhr in 1950, the last year of full diesel operation. In 1951, the plant transferred a total of $27,830 to the city's general fund; in 1952, it transferred approximately $30,000.

The dual-fuel engines use a natural gas with a heating value of 900 BTU per cubic foot, purchased at an average cost of 0.202 cents per thousand cubic feet. The gas reaches the plant at 80 pounds of pressure per square inch (psi) and is reduced to 30 psi before going to the engines.

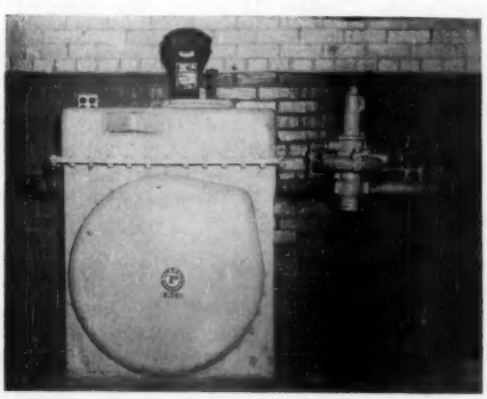
Supply and Distribution

A breakdown of the plant's 1952 sales shows that the use of electricity is well distributed:

	Kwhrs
Industry	1,859,000
Residential	1,329,400
Commercial	2,132,400
Station power	209,500
Street lights	303,860
Miscellaneous	402,600

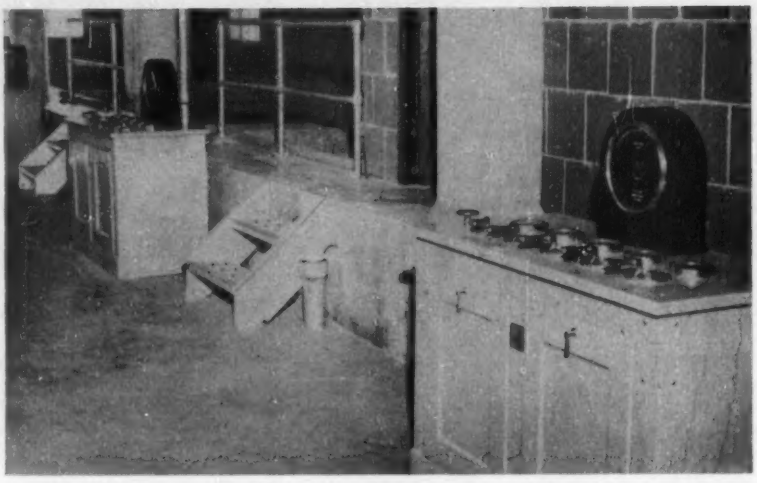
In addition to supplying free power for street lighting, the plant also powers the city's sewage-treatment plant, public buildings, parks, recreation centers, and athletic fields.

There has been very little change in the plant personnel through the years. Elmer Woosley has a service record of 34 years; Tom Godfrey, 32 years; and John Fisher, 12 years. Mr. Woosley and Mr. Godfrey have operated the plant since its early steam-engine days.



An Emco meter and regulator reduces the natural gas volume to 30 psi before it's used by engines.

Rebuild Water Filters



A Bacharach filter-control table governs the performance of the rebuilt water filters.

With Care

By BRADLEY L. GUTHRIE
Superintendent of Filtration Plant
Brown County Water Improvement District No. 1
Brownwood, Texas

ONE CAN NEVER BE too careful when building or rebuilding a rapid sand filter. The odds are that many filter difficulties can usually be traced to a flaw in the workmanship of installation.

Our filter plant was constructed in 1939 to serve Brownwood, a city of 21,000 in central Texas. Later, in 1942, the plant's capacity was doubled so that it could serve Camp Bowie, an Army training center that introduced a lot of boys to this part of Texas during the last war.

The original plant was built with four filters. Each was designed to filter 1 mgd (million gallons daily) at the conventional rate of 2½ gallons per square foot per minute. The beds measure 23 by 16 feet each. They are equipped with 18-inch center collector manifolds and 2-inch cast-iron laterals spaced 6 inches apart. The filters are equipped with E. W. Bacharach control tables and Simplex Valve and Meter rate-of-flow controllers.

The filter media consists of 30 inches of sand with an effective size of 0.35 to 0.60 and a uniformity coefficient of 1.50. The sand is supported by 18 inches of gravel, graded as follows:

Depth of Layer (in inches)	*Screen Size (in inches) Passing*	*Retained*
6	2½	1
4	1	¾
4	¾	½
4	½	⅛

The difficulties that led to the reconditioning of the filters were twofold. First, the filters, because of faulty installation, had developed hard spots that would not expand while the filter was being washed. Then, because of an overloaded flow rate that had existed over a period of about two years during the war, more hard spots were formed because of inefficient backwash water. This condition finally resulted in a very poor filter system. The filter runs were uncomfortably short since almost half of the sand area was clogged.

To correct this condition we decided to rebuild the filters during the winter when water use was relatively low. As a preliminary to this operation, we constructed sand bins outside the building. We built the bins of 2-inch by 12-inch timber, stripping all cracks with screen wire to hold the sand and yet provide an outlet for the water.

Next, we built a jet pump to remove both the sand and gravel. We used a common 3-inch galvanized-pipe "T" as the chief unit of the homemade pump. We mounted a 6-inch funnel on the stem of the "T," with the stem turned upward. Then we inserted a 1½-inch pressure hose into one side of the base, and connected a 3-inch fire hose to the other side. As sand was placed in the funnel, the pressure hose would wash it out through the fire hose into our bins.

Efficiency of Jet Pump

We found that the jet pump was very efficient in removing both the sand and the gravel, reducing by at least 75% the labor of removing the

filter media. We also found that this jet method was very efficient in cleaning the sand.

A small percentage of the coarsest gravel had to be removed by hand since it could not pass the 3-inch jet throat satisfactorily. Furthermore, we passed the last of the sand over a ⅛-inch inclined screen to separate it from the top layer of gravel. In the same way, as we reached near the end of each layer, we passed the gravel over an appropriately sized vibrating, inclined screen.

The screens, purchased from a local rock-crushing firm, were made from ⅜-inch-thick, pierced steel plates, and measured 4 feet wide and 8 feet long. We made the vibrating device from a 1.3-hp motor.

Laterals Rehabilitated

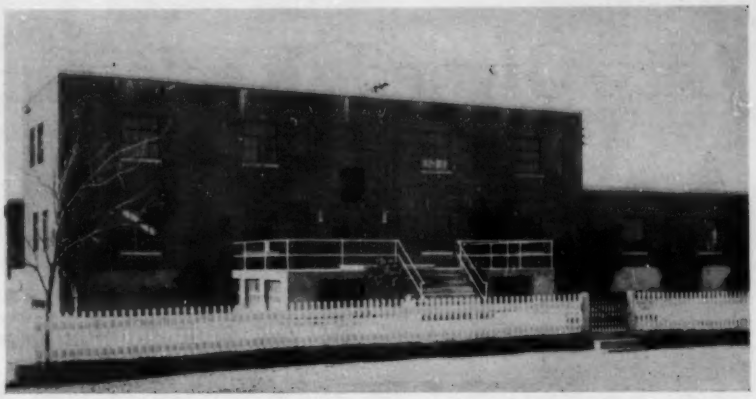
After all the gravel had been removed, we examined the 2-inch, cast-iron laterals and found the interior walls in excellent condition. The walls had been provided with a well-preserved tar coating that had completely prevented any tuberculation. However, each lateral had been drilled on 6-inch centers on the underside, with ⅜-inch holes, and these holes had become so rust-clogged that they were no more than half open.

We also found several caked lumps of caliche and other foreign matter in the bottom of the filters that had been evidently dumped from a truck that had not been thoroughly cleaned before receiving the load of gravel. Furthermore, this condition indicated that all the filter media had been put in place without backwashing between each layer. We find this backwashing most essential for the removal of any foreign material that might find its way into the sand or gravel.

We also found that three 2-inch cast-iron laterals had been broken off near the manifold, as if the lack of proper support on the outer ends had caused the laterals to snap when the weight of the gravel was applied. When we had completed inspecting the 2-inch laterals and reamed the ⅜-inch holes, we replaced the gravel, carefully placing the layers of various sizes in the proper location.

Importance of Level Layers

I would like to emphasize the importance of leveling each layer of gravel. We accomplished this by raising the level of wash water each time to the surface of the gravel and smoothing the layer with a 6-foot length of timber attached to a long handle so that each layer was perfectly level with the surface of the water.



With its filter problems solved, the Brown County District Plant is a peaceful site.

Instead of dumping the sand through the trap door, we brought it in with the jet hose and discharged it into the filter bed which had previously been filled with water to the level of the wash troughs. By spreading the sand over the entire bed and backwashing several times in the process, we placed the sand accurately without disturbing the smooth surface of the layer of gravel.

Another important step to remember is, even though each 4-inch layer of gravel is leveled perfectly, it will not remain that way if a workman treads on it. The smooth layers can be completely ruined by the weight of a man. We used 6-foot lengths of 1-inch by 2-inch planks for the workmen to stand on while leveling the gravel layers.

Now that the work is complete, we have four filter units that work perfectly, with no hard spots or uneven distribution of water. We are very well pleased with the results of this reconditioning venture. With the aid of only one additional laborer for a period of three months, we were able to meet easily the increased springtime water demands. Because of the labor saving made possible by the jet pump in removing the filter media, we have reconditioned four units at a cost we estimate would have been required for one.

Death of Norman Russell

Norman F. S. Russell, chairman of the board of U. S. Pipe and Foundry Company, died recently at his home in Edgewater Park, N. J.

Well-known for his keen interest in developing new products and methods, Mr. Russell was responsible for the establishment of a research department in the company as early as 1929. He was also a proponent of the method of casting cast-iron pressure pipe centrifugally in metal molds.

Mr. Russell's affiliation with the company dates back to 1910 when he became a sales trainee. He then climbed the ladder to salesman, sales agent, eastern sales manager, purchasing agent, and general sales manager.

In 1922, he was elected vice president, president in 1923, and chairman of the board in 1948.

Mr. Russell actively participated in the affairs of the Cast Iron Pipe Research Association, serving as vice chairman of the committee which issued new specifications for cast-iron pipe and fittings.

His memberships included the American Water Works Association, American Gas Association, American Iron and Steel Institute, among many other business and technical organizations.

City-Owned Rock Crushers Are Money Savers

Rapid City's street department's demand for rock is steady and substantial

By H. S. THORGRIMSEN
City Manager
Rapid City, S. D.

CRUSHING ROCK is not one of the most popular municipal activities. One survey reports that among 17,000 incorporated areas in the nation not more than 500 crusher plants are in operation. Yet the indication is that this number of city-owned plants is destined to increase. The growth may not be spectacular, but it will come, for the economic balance sheet is a convincing policy maker.

A city will operate its own crushing plant when it can show a solid and unchallenged savings accomplished by this work. It can realize such savings when it has a substantial annual demand for crushed rock. For a small city to develop this demand, it should have a large number of asphalt-paved streets that need resealing and resurfacing.

To demonstrate the savings it has made, the city must be able to publish figures that include all costs, such as overhead, depreciation, and a fair estimate for taxes. These costs must be well below those offered by private contractors, for a small margin of difference would never justify the city's investment in such a plant.

Rapid City, a community of 25,000 in western South Dakota, meets all these qualifications. Outside of a few arteries, all the city streets are paved with asphalt in some form or another, except for certain alleys and unimproved roadways which also require a substantial amount of crushed rock.

We require, easily, around 80,000 tons of rock per year. Our cost of production, including depreciation reserve, runs conservatively at 68 cents per ton. The closest bid to this estimate is $1 per ton, a quotation made informally by a private crushing concern. Furthermore, the contractors stated that they would have to be assured of a minimum order for 100,000 tons per year which is more than we can use.

The crushing plant that the city operates is a two-stage type. The primary element reduces all fragments to a diameter of 2½ to 3 inches or less. The secondary stage reduces these to smaller diameters of 1 inch, ¾, ⅝, ½, ⅜, or ¼ of an inch. We get two basic products: pit-run crushed rock and rock chips. Fragments smaller than ¼ inch, "fines," constitute the third product and are usually discarded.

For practical purposes, a maximum of two passes through the secondary crusher and the screens will reduce fragments to the size required. Production of the chips are most costly because they require a greater number of crushing and screening operations. The ⅜-inch chips are furnished to the city's hot-mix asphalt plant, or are used as final cover for penetration-type asphalt-surfaced streets.

During the five years of the city's crusher operation, approximately 20,000 tons of chips have been produced, or 5½% of the total production. Commercial crushers, operating in this area, sell chips for about $2.20 per ton. We have not separated the cost of chip production from the balance of the operation and so we cannot compare our costs with the quoted price.

The land where the quarrying takes place has been owned by the city for as long as a half-century and was originally purchased for water rights. It is an 80-acre site on which

Cost Per Ton of Crushed Rock (1953)

Value of land per year (8-year period)	$156.25	
Miscellaneous setting-up expenses (8-year period)	368.75	
Total Set Cost		$ 525.00
Depreciation costs of equipment for year		
Crusher, primary	825.13	
Crusher, secondary	1,213.71	
TD-18 bulldozer	1,044.50	
105 compressor	532.83	
Jack hammer	45.00	
2 dump trucks depreciated to no value by 1952.		
Total Depreciation of Equipment		3,661.17
Total salaries		20,032.85
Operating expenses for year		
Equipment repair	1,562.42	
Miscellaneous tools and supplies	416.64	
Drills, steel and bits	402.25	
Gas and oil	2,928.00	
Explosives	4,092.08	
Power	1,730.53	
Car expense	70.11	
2 trucks, stockpiling	1,848.00	
Total Operating Costs		13,050.03
Administration costs, based on 74,407 tons at 14 cents each (includes overhead and miscellaneous costs)		
Total Administration		10,416.98
Grand Total Costs		$47,686.03

Total tons of crushed rock produced — 74,407 tons.

$47,686.03 ÷ 74,407 tons = cost per ton — $0.6408.

An International tractor bulldozes rock into Rapid City's all-electric crusher plant.

we place a value of $10,000. Consequently, the 10 acres that are currently in use are valued at $1,250. We expect to be able to quarry from this area for the next eight years without moving our equipment.

Equipment and Men

The plant equipment and values are listed below:

Equipment	*Value*
Pioneer Model 171 primary crusher	$14,027
Pioneer Model 140 secondary crusher	20,633
2 International TD-18 bulldozers	22,383
Jaeger Model 105 compressor and hammer	3,557
Chevrolet dump truck	2,345
Total	$62,945

We also employ two trucks on a part-time basis. Each truck is used about six hours per day, 5 days a week, and seven months of each year, for a total of 840 hours per truck per year. The South Dakota State Highway Department has established a rate of $1.10 per hour for dump trucks of this size, making our yearly cost for the two trucks $1,848.

We require the services of six men on a full-time basis and two part-time truck drivers. The payroll for this crew is broken down as follows:

Employees	*Per Hour each*	*Per Month each*
1	....	$292
3	....	270
2 (truck drivers)	....	245
1	$1.50	....
1	1.35	....

Miscellaneous costs are estimated for foundations, belts, motors, small buildings, and traps, representing an investment of $2,750 per month. To calculate depreciation on all equipment, we have used Form F figures, issued by the Internal Revenue Bureau.

With this equipment, we have produced rock at an average rate of 70,904 tons per year. Future operations will raise this average since the first year's breaking-in period cut our output. The first year's production totaled 38,600 tons. The second year, our largest annual production, the output was 89,600 tons. In succeeding years, the output has averaged 79,000 tons.

In calculating operating costs, we attribute 14 cents per ton to administration costs. This classification includes charges on all work not directly involved with the production of crushed rock or chips: the paper work costs involved in making requisitions and purchase orders, paying bills and maintaining payrolls, tax payments if the city paid taxes, medical or hospital care of employees.

Using these data, we made a summary and calculated average costs of the rock for the past six years:

Total tons crushed	428,929
Total cost	$288,891.85
Average cost per ton	.6735

Broken down by years the costs are as follows:

Year	*Tons Produced*	*Cost Per Ton*
1948	38,586	$1.08
1949	89,616	.56
1950	61,326	.72
1951	81,294	.64
1952	83,700	.63
1953	74,407	.64

It is interesting to compare these figures with those available from other sources. For example, the state crushes rock at its cement-manufacturing plant, an operation which produces 225,000 tons annually at a cost figure of 50 cents per ton. However, the state costs do not include any figures representing the equivalent of taxes that a private plant would have to pay. The city estimates do allow for this charge.

Commercial outfits have made informal, verbal bids of $1 per ton for 100,000 tons of pit-run crushed rock annually, including the stockpiling of rock. The standard price to the general public for the same commodity in the area is $1.85 per ton and delivery charges are approximately 10 cents per ton-mile.

Assuming a 30 cent differential between purchased rock and rock produced at the city plant, and assuming also an annual production total of 80,000 tons, one then arrives at the sum of $24,000, which represents the saving that the city's plant can achieve. However, should production drop below 70,000 tons, our annual savings would diminish. We expect to require this amount of rock each year so long as we continue to use asphalt paving predominantly in our city.

One of the dams and effluent pipeline to be used in the river-reclamation project.

Lima, Ohio, will pump effluent—more free from pollution than the river—upstream to maintain constant flow during dry periods

By E. E. SMITH
Director of Utilities
Lima, Ohio

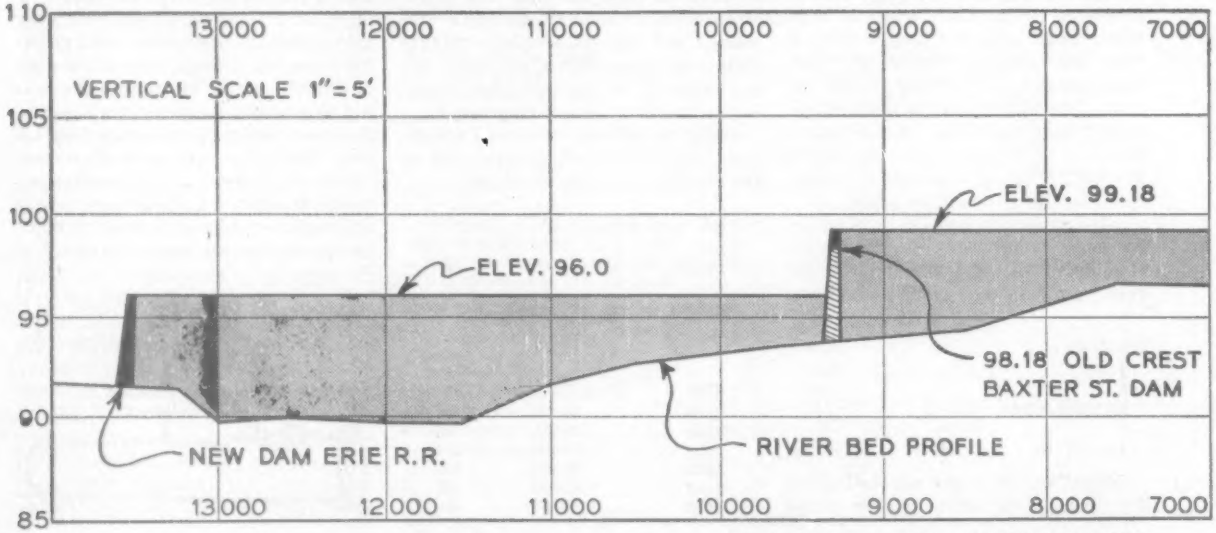
Sewage Can Make A River More Attractive

A RIVER, to be a civic asset, ought to look like a river. It should have an adequate flow of water that is clean, attractive, and free from pollution. It ought to present no risk from dangerous floods or offensive periods of drought when the dry, raw river bed often discloses itself like an ugly scar, marring the city's face.

Although Lima, Ohio, is potentially benefited by the Ottawa River's coursing the city, it will require the aid of the effluent from the sewage-treatment plant to make the river a municipal resource. Instead of tolerating the periodic eyesore that the river has become, this municipality of some 50,000 in western Ohio, has launched a project that will transform the Ottawa into a consistently well-filled, scenic stream that will provide pleasure and interest.

The project, sponsored by the Lima Civic Improvement Committee, has enjoyed the full cooperation of the city officials. It is being financed by a bond issue of $220,800 to meet the

Five dams, each one located at a different elevation, will maintain the water level as it passes through the city. Three units, which



capital outlay and by an annual appropriation of $10,000 for operation and maintenance.

The work involves the repair of three existing dams, built many years ago, but unused in recent years. It also includes the construction of two new dams to help keep water at a favorable level. When the river flows drop, sewage effluent will be pumped through a 24-inch pipeline from the sewage plant to the upper pool at the rate of approximately 8 mgd (million gallons daily) to maintain a flow.

Improvement Project Details

The first step in this improvement consists of removing silt deposits and cleaning the river channel. This operation begins at a point 500 feet from the upper end of the project and extends downstream for 9,500 feet. The work is divided into two parts. The upper 2,500 feet requires dredging several large silt deposits, cleaning and opening the river channel in excess of 100 feet in width, providing steep banks, covering portions with rubble, and other portions with a concrete wall.

Cleaning in the lower 7,000 feet is limited to removing small silt deposits, thus providing the same clear river channel. Construction of one of the new dams eliminated the need for cleaning the balance of the river bed.

The next step required the placing of a 24-inch pipeline from the sewage-treatment plant to the upper pool. The pipe is made of reinforced concrete built in 16-foot lengths. The line starts at the chlorinator house of the treatment plant. One stretch of pipe will be 12-inch cast-iron, laid through a railroad bridge and across the river. The line discharges to an outlet box placed 1,500 feet upstream from the upper Bellefontaine Dam.

One pump will transfer the treated, chlorinated effluent from the plant to the line. This pump can deliver 4,200 gpm (gallons per minute) against a total dynamic head of 40 feet. The pump and its motor and controls are being installed in the chlorinator house.

A 3,000-pound chlorinator also constitutes an important part of the operation. Chlorination of the sewage that already has received thorough biological treatment insures that the discharged effluent will be as good and probably better than the river water flowing into the pool. In this case, the effluent is actually being used to improve the condition of the river water.

Dam Repair and Construction

Finally, we come to the dams. All of these, except the one at the far downstream point, will have water on both the upstream and downstream sides. At no time will the bottom of the river be exposed.

Dam No. 1, at Bellefontaine Avenue, is one of the three older units being renovated. It consists of a concrete structure on a rock foundation, having a vertical upstream face, a 24-inch flat crest, and varying downstream slopes of between 1:1 and 1½:1. We are raising this dam 1 foot and rebuilding the spillway and crest with reinforced concrete doweled to the old structure. The normal head will be 1.8 feet. The highest possible head, assuming that the lower pool is completely empty, will be 6.7 feet.

Dam No. 2, at Jackson Street, also is one of the older units. It is based on a rock foundation, with a vertical upstream face, a thickness of 3 feet with 100 feet of crest, and a straight downstream side at a 3:1 slope. The dam has suffered considerable undercutting at the toe. We are raising the crest of the dam 1.45 feet and lengthening it to 125 feet, giving the downstream side a rounded shape that should eliminate the undercutting. This dam will have a normal head of 3.5 feet; its maximum possible head is 6.5 feet.

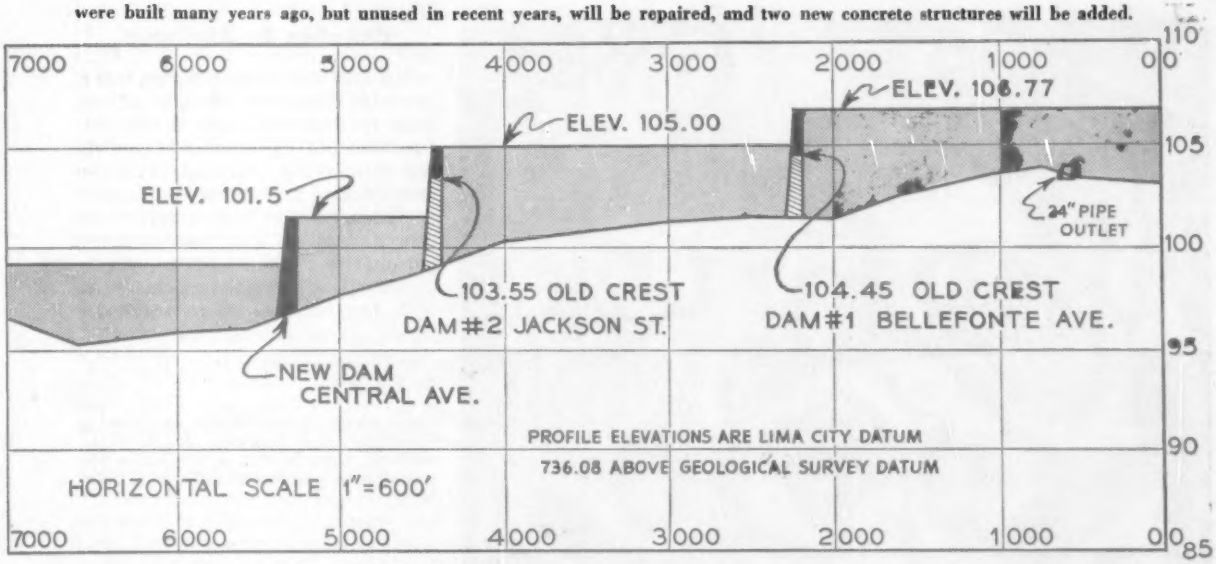
The third dam, at Central Avenue, will be of concrete set in 2 feet of rock. It has a 4.5-foot base width, a maximum possible head of 3 feet, and a normal head of 2.3 feet.

The fourth dam, at Baxter Street, also constructed of concrete set in rock, requires very little raising. Its crest will be raised only 1 foot and its spillway will be improved.

The last dam, at the Erie Railroad, is a new unit that will be built of concrete on a base of gravel and clay. It will have a head of 5 feet and a 6-foot apron below the dam with cut-off walls to eliminate erosion.

When this project is complete, Lima will have a river flowing through the city that will meet the most cherished expectations of all our people—a beautiful stream creating a fresh, green park through the midst of our city.

were built many years ago, but unused in recent years, will be repaired, and two new concrete structures will be added.



Central High School's operating engineer, Ray Allis, assembled a smoke-detection panel which has enabled him to prevent the school from becoming a smoke violator.

Schools Cut Air Pollution

Columbus, Ohio, Board of Education saves $50,000 annually with abatement program

AN AGGRESSIVE PROGRAM of air-pollution abatement initiated by the Board of Education in Columbus, Ohio, has set an example of good citizenship and has earned a yearly reward of $50,000. The money represents the annual savings that the Board has been able to realize in reduced coal bills since the heating plants in the schools were revamped. More than 80% of the schools' heating units were corrected for smoke abatement in the past five years.

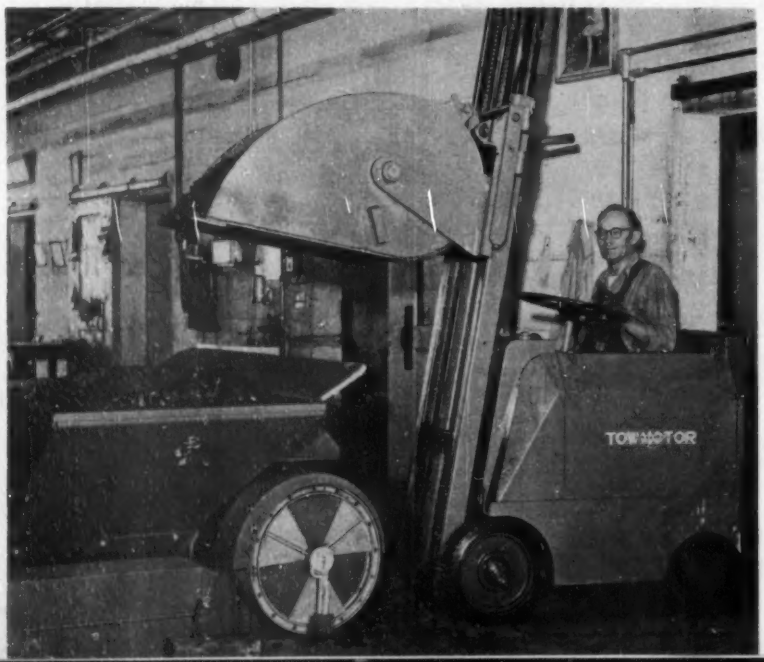
Proof of Performance

The Columbus program began in 1948 when the Coal Producers Committee for Smoke Abatement decided to prove by actual performance that a city could clear its atmosphere of smoke without legally restricting choice of coal purchases. This organization, located in the Transportation Building, Cincinnati 2, Ohio, set out to demonstrate that all fuels are smokeless when properly burned. Furthermore, in most instances, abatement of smoke would actually pay dividends in dollars and cents.

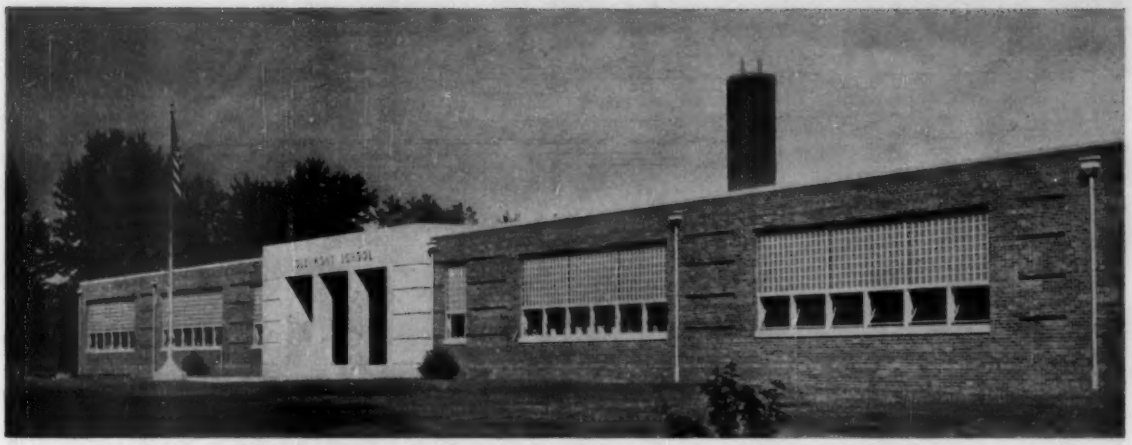
Columbus was selected as the demonstration city because municipal and school authorities wholeheartedly agreed to go along with any plan which would be practical from an engineering standpoint and economically feasible. This agreement was of vital importance because the Committee had seen too many air-pollution control programs atrophy and die, because of lack of cooperation by municipal and school properties which remained among the chief offenders. Schools especially came in for criticism because their location continued the offense in residential districts.

Procedure for Abatement

The first step in the program was a thorough inspection of most of the large fuel-burning plants in the city, including all of the schools. This was done by the Committee with the assistance of 25 leading combustion engineers in the coal industry. A course of action was then prepared not only to abate the smoke, but to increase heating plant efficiency as well. As a result of the recommenda-



Older schools, provided with new stoking equipment and improved coal-handling methods, have helped to ameliorate the air-pollution problem in Columbus, Ohio.



New schools, equipped with automatic fuel-burning units, present no smoke problem.

tions, the Board of Education announced a proposed seven-year program and repair of the existing plant equipment.

At the same time, the City of Columbus engaged Smoke Regulation Engineer Harry C. Ballman, who had made an enviable record for control of air pollution in Richmond, Va. The smoke-abatement ordinance was revised and its enforcement started early in 1949.

Recently, the authorities requested the Committee to again survey the city to determine the amount of progress made. Reappraisal began with the schools where startling improvements were disclosed. For example, in 1948, 88% of the schools were emitting smoke with a density of No. 2, or greater, on the Ringelmann Chart, which is a violation of the city ordinance. These violations were caused by faulty equipment and improper firing methods. Current plant performance has been so improved by replacement of old, worn-out equipment, and efficient operating techniques, that for only 26% of the schools is there a record of an occasional violation. This figure will be further reduced when the modernization program is complete. At the moment, there is a drop of 62% in the number of schools operating heating equipment that smokes.

Results of Resurvey

This figure is almost identical with the improvements made percentage-wise. Records indicate that 47.8% of the schools have adopted the Committee's recommendations in full and 16% have made partial revision, for a performance factor of 63.8%.

Since the 1948 survey, 15 new schools have been built, bringing the total to 83 city schools. Based on this number, the investigators have found:

16.9%	are new schools equipped with automatic fuel-burning equipment
39.7%	have complied completely with recommendations
13.2%	have complied partially with recommendations
18.1%	required no correction
12.1%	have taken no action to date

Thus, 87.9% of the schools now have equipment which meets all requirements of the city ordinance. As an example of some of the improvements which have been made, it is necessary only to recall that in 1948 there were 284 warm-air furnaces and stoves being used by Columbus public schools. In 1953, that number was reduced to 123; by January 1954, it was expected that few, if any, such antiquated units will have remained. Elimination of these units has served not only to reduce fuel consumption, but has effected considerable savings in labor costs as well.

East Hartford Enacts Nine O'clock Curfew

AN ORDINANCE adopted by the Town Council of East Hartford, Conn., on January 19, 1954, makes it unlawful for a child under 16 years of age to be on the streets or in any theater or other public place after nine o'clock at night unaccompanied by an authorized adult—unless the child has written permission stating his destination and the time he shall return home.

The ordinance also places upon parents and guardians the responsibility for keeping children from becoming juvenile delinquents. It states that any parent, guardian, or other person having custody of any child under 18 who omits to exercise reasonable diligence in the control of such child shall be fined not more than $500 or imprisoned not more than six months, or both.

In addition to making the parent or guardian responsible for seeing that the child does not wander about the streets alone at night, the ordinance pointedly reminds him of his duty to keep the child from being a truant, from associating with vicious or immoral persons, and from entering places where his morals may be impaired.

The ordinance was printed and distributed, together with a letter to all parents, by Council President John Lorpey, pointing out that it had been enacted at the recommendation of a group of "your fellow citizens," comprising members of the clergy of all faiths, the local school system, the town court, and other town officials.

There is an ever-increasing need for wholesome recreational activity in every urban community in our country. No longer is recreation looked upon as a luxury only to be enjoyed by the rich. Our present-day trend of living places recreation in the category of normal necessary factors in city living.

JOHN BIERY
City Manager
Colorado Springs, Colo.

[From "Recreation in Colorado Springs," a summary of statistics for the year 1953, by the Department of Recreation, Colorado Springs.]

The Wollman Memorial

Gifts to Central Park

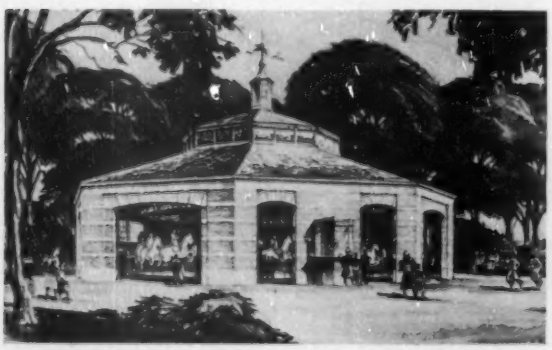
By ROBERT MOSES
Commissioner of Parks
City of New York

IN RECENT YEARS the generosity of private citizens has brought to Central Park features that the City of New York, with its many commitments for the vital necessities of city operation, could not possibly have built. It is fortunate that these benefactors have held such high regard for their fellow citizens.

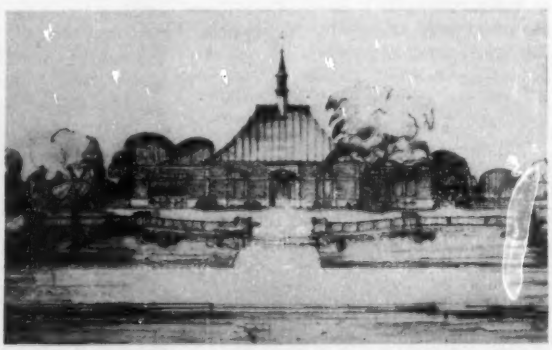
A new boathouse at the 72nd Street lake in Central Park was opened on March 12, 1954. The gift of Mr. and Mrs. Carl M. Loeb, this building replaces the antiquated structure which has been inadequate for many years. Designed in traditional Victorian architecture, the building contains a food concession, dining terraces, men's and women's comfort stations, and complete modern facilities for the boating concession.

The Wollman Memorial, a gift from Miss Kate Wollman, is located in Central Park near 63rd Street, just north of the 59th Street lake. Opened in December 1950, it consists of a large outdoor artificial ice-skating rink, a recreational building and a children's playground. The two-acre rink is also used for roller skating, dancing, and concerts during the spring, summer, and fall. Total cost of construction was $800,000; $600,000 gift from Miss Wollman, and $200,000 city funds.

The Michael Friedsam Foundation has donated two Merry-Go-Rounds to the City of New York, one in Central Park, built in 1951, and one in Prospect Park, built in 1952. Identical in construction, the 78-foot-diameter Memorials include wooden horses and chariots on 50-foot turntables. The Central Park Merry-Go-Round is near the 65th Street Transverse Road and the one in Prospect Park at the Empire Boulevard entrance just south of the zoo. These gifts totaling over $200,000 are named after the widely



A sketch of the Merry-Go-Round at Central Park.



A drawing of the proposed boathouse for model yachts.

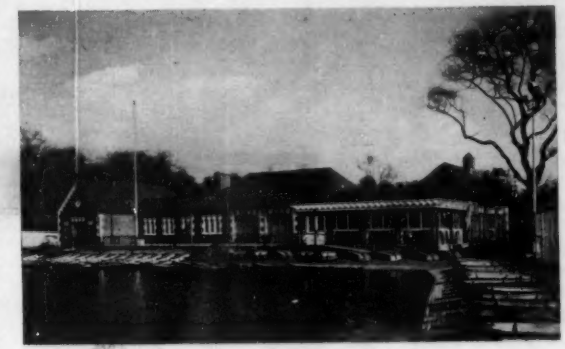
AN ATTRACTIVE, well-illustrated 62-page report on 20-years of progress in New York City's Department of Parks, was released by Commissioner Moses in March. The report details the growth of the park system from 14,000 to 27,000 acres; the rise in number of playgrounds, from 119 in 1934 to 597 today; the increase in beach facilities, from one mile in 1934 to 16 miles in 1952; the arterial parkway and expressway program; maintenance and operation, and museums and institutions. The report, entitled 20 *Years of Progress*, is available from the Department of Parks, Arsenal, Central Park, New York, N. Y.

A gift of an anonymous donor — the Chess and Checker House.

known philanthropist, Michael Friedsam, former president of B. Altman & Company.

The Sara J. Woodward plantings of chrysanthemums have been on display annually since 1942. The 1953 plantings included Central Park Conservatory Gardens; the 59th Street Plaza; Bryant Park; Bowling Green Park, and Cadman Plaza in Brooklyn. Planted solidly in beds, some of them 250 feet long, the flowers cover a large range of colors and sizes.

The Chess and Checker House in Central Park is located in the center of the park, opposite 64th Street. The building was built with funds donated by a prominent New Yorker who prefers to remain anonymous. It is octagonal in shape, Victorian in style, and includes seven double playing tables in the building. Sixteen concrete tables built previously on the area surrounding the building round out the facility. The building can be controlled in all kinds of weather for the comfort and year-round pleasure of the chess and checker players.



Boating enthusiasts will be pleased with the modern facilities of the new boathouse.

Funds have been donated by Mrs. Jeanne E. Kerbs for a new boathouse for model yachts on Conservatory Lake in Central Park. The building now under construction will contain a large room for the storage of model boats, a public comfort station, maintenance facilities, and refreshment concession and will be in the traditional Victorian architecture of Central Park. A 160-foot-long terrace in front of the building will overlook boating on the lake and will include a sand pit and benches.

Secaucus Tax Bills Written by I.B.M. Outside the Office

By HOWARD W. BAKER
Town Collector
Secaucus, N. J.

DUE TO the rapid development of farm and other lands in Secaucus, N. J. (population 9,800), our old hand method of writing tax records and tax bills had become antiquated and costly. After investigation of the various methods used throughout the state, we decided that the service rendered by International Business Machines would be the most advantageous and economical for the Town of Secaucus.

Service Rendered

The service prepares the Assessor's field books and tax-duplicate lists for submission to the County Board of Taxation. On approval of the tax-duplicate list, and when the tax rate has been struck by the County Board, the service then prepares the Tax Collector's Tax Duplicate and Tax Bills. The final phase of the service prepares the preliminary tax bills for the succeeding year based on one-half of the tax billed in the current year.

The preparation of the tax duplicate and tax bills provides not alone for the computation of the tax due, based on the assessed valuation times the tax rate, but also provides for the subtraction of the first half tax billed from the total tax due. Tax bills are inserted in standard-size window envelopes, thereby avoiding the necessity of addressing nonwindow-type envelopes as was done heretofore.

While very substantial savings in clerical work are made each year through the use of this service, even greater advantages are the accuracy, neatness, and legibility of the tax records and tax bills.

The service does not have to deprive the municipality of its tax records. In our case we have designed a 7-inch card to provide all the information required for the preparation of the tax books and tax bills.. We prepared the cards in duplicate in order to maintain a complete record in the tax office at all times. In conclusion, we recommend the service to small municipalities as an economy and a step forward in simplicity and clarity.

Boom Town Bills Faster Than Before Oil Was Struck

By VIRGIL C. KNOWLES *

WE OF THE CITY GOVERNMENT of Sidney, Nebr. [population 6,900 (3,400 in 1940)], were proud of the comment which was made by an executive of a large Eastern oil company following a visit to Sidney: "This is the quietest boom town I've ever seen."

There was good reason to expect that Sidney might be something other than a smooth-running, well-organized community. In the last three years, approximately 150 oil and natural gas wells have been "brought home" in our immediate vicinity. As this was written, research and plans were continuing for the development of additional wells and work was nearing completion on a pipeline to connect the fields near Sidney directly with Eastern refineries, so that production from our wells could begin in earnest.

Added to all this, the Army activated the Sioux Ordnance Depot, which is just a few miles west of Sidney, adding more than 1,000 extra people to the group which had already been attracted by the discovery of oil.

With all these potential economic stresses added to a town which tallied in with less than 5,000 during the 1950 census, it is understandable that visitors might be surprised to find things in good order and running smoothly. We like also to think, in regard to those phases of the economic expansion which affect our city government, that we have been able to cope with them because we had a sound administrative structure to begin with.

The city administration plays a more active part in economic expansion in Sidney than in some communities because we operate municipally owned utilities, including electricity, water, sewage, and waste. Expanded housing and increased industrial development are dependent, therefore, on the ability of the city's utilities systems to grow with them.

In the three years following the discovery of oil in our area, our meter connections for both water and electricity were up a full one-third, with consumption keeping pace. Fortunately, our utilities systems had been set up in anticipation of a need for expanded service of about 10% a year. The expansion which hit us, of course, was far more than we had originally planned for, but the facilities, as they existed, were more than adequate to cushion the initial shock.

The discovery of oil in itself helped us meet the need for increased electrical output. Within a short time, we had a number of natural-gas wells operating in the area. Taking advantage of this new fuel, we arranged for a new 3,500-hp diesel-electric unit, largest dual-fuel unit in Nebraska. This new equipment, which went into use in November 1952, operates with natural gas as the primary fuel and uses a diesel pilot.

In expanding our water-supply facilities, we added to our pumping equipment, mains, etc., to take greater advantage of the four wells already in existence.

Billing and Accounting

Probably the best example of how we keep pace with our expanding markets is in our accounting department. The increased number of meters means many more bills and payments every month. In a modernization program put into effect under the direction of Dorothy Claycomb, our chief clerk and secretary, we are now handling bills for approximately one-third more meters with about half the billing and mailing work which was required before we changed our system.

For more than a decade, we have handled our billing and general accounting work on a Remington Rand accounting machine. On the strength of past performance we decided to keep the same make of equipment, installing a machine which would give us greater capacity. Under our old system each customer got three

* Mr. Knowles was city manager of Sidney, Nebr., when he prepared this article. He is now city manager of Parsons, Kans.

bills every month—one for electricity, another for water and sewage, and a third for waste removal.

We now cover all utility charges for each customer on a single bill. The accounting machine operator works directly from the records filled out by our meter readers, which give current reading and date, consumption of electricity and water since the last reading and the amount to be charged. As these extensions are made in the meter books, an adding-machine trial balance is taken for proofing against the totals produced by our accounting machine in the course of writing bills.

Bill form and duplicate are inserted in the machine to correspond with the left-hand portion of our journal sheet. In preparing the bill, the operator lists the code designation for each of the services to be charged. In the two categories for which we use meter readings, water and electricity, the present and previous totals are listed. When the subtraction for metered consumption is made, the machine automatically throws an audit cipher to prove that the calculation is correct.

The charges for each of the utility services are listed separately. After all the charge entries have been made, the operator posts the total amount due and, again, the machine automatically proves her work with an audit cipher. By tripping a lever she automatically imprints the dates for the periods covered in the meter readings.

When the bill is completed, the operator carries the carriage over to the portion of the wide journal sheet, which is not covered by the bill form. Here she enters the name of the account and proceeds to a series of columns in which she enters charges for delinquencies in bill payments and also distributes the charges to their proper utility categories.

The accounting machine provides a foolproof series of checks and balances. At the end of each series of journal entries, the figures for metered consumption are added to those for the previous month's readings. The total of these must equal that for the current month's readings.

Revised Billing Method Shows Savings

The bills are pre-printed post cards which are addressed on addressing machines. The second copies are placed in the files at our service collection window.

Any which are left over from the previous paying period represent unpaid bills. A space is provided in the upper corner of our bill form for handposting of the charges which are carried forward in this manner. A past-due charge is entered on both the original and second copies, so that our collection media correspond with our invoices.

By including all services on a single bill, instead of requiring three, we enjoy considerable savings in both printing and postage expenses. This new system has enabled us to absorb the one-third increase in service rendered in approximately the same amount of working time as was required to handle the billing work before Sidney became a "boom town."

With a billing system centered around the use of this Remington Rand accounting machine, the City of Sidney handles one-third more subscribers in half the time required before this system was adopted.

Single-Family Housing Tried in Some Public Projects

EXPERIENCE of scattered cities with publicly aided single-family or duplex housing has been summarized by the National Association of Housing and Redevelopment Officials. The programs have been in Massachusetts, Connecticut, and Wisconsin under state and city support.

Boston is scheduled to sell its 941 units of state-aided, city-owned veterans' housing, mostly in one- and two-family structures. Estimates by the city's finance commission are that Boston will take a loss of more than $3,000,000 on the sale.

Boston is one of the 15 Massachusetts cities to finance veterans' projects, reimbursed by the state to the extent of 10% of development costs which came to about $16,000,000. The state's aid, under its five-year rent-option program, ended in 1953. The finance commission reported that as long as the properties are in the city's hands, the loss on them would rise at the rate of $600,000 a year. Sale of the buildings is expected to bring about $7,000 a unit, the commission said.

In Port Washington, Wis., 32 prefabricated houses were financed with a $128,000 interest-free loan from the city. The houses sold for $7,906 to $9,800.

In Kenosha, Wis., 108 five-year, rent-option houses were built in 1948 and 1949 with city aid in the form of a loan to the housing authority to purchase tax-delinquent lots located throughout the city. At first, tenants had an option to buy the houses within five years for the actual cost of house and lot—ranging from $8,400 to $8,900. But less than half of the houses had been sold at the end of the five-year period. So the limit was abandoned, and tenants may now use the option at any time.

Green Bay, Wis., loaned $223,000 to the housing authority to buy 100 single-family houses from the federal government and land offered by the county at a tax-deed sale. All the houses were sold to veterans, who paid from $2,500 to $3,250, depending on the size of the units. The city had recovered all its loan by the end of 1947.

Under Connecticut's moderate-rental program, single-family and duplex houses were financed by the state's low-interest-rate loans to housing authorities. In Darien, for example, 41 single-family structures were built to rent for $56 a month, not including utilities.

MPR

The City Tells Its Story

Edited by PAN DODD WHEELER
Executive Director, Government Public Relations Association

World-Wide GPR Movement Seeks Recognition for the PR Profession

MUNICIPAL LEADERS are concerned always about the standards of performance, the skills, and the professional ethics of staff members who make up a city administration. The municipal public-relations officials and other city officers (managers, mayors, administrative assistants, councilmen) who have joined PRO's of other governmental units in the Government Public Relations Association, recognize the importance of these — performance, skills, ethics, and professional recognition for public relations—if a GPR program is to make its maximum contribution to democratic government.

International Committee At Work

Of direct interest is the attention to the same problems being given by an international committee, looking towards the formation of an International Public Relations Association, and the work of the Institute of Public Relations (IPR) in Great Britain, of *Le Club de la Maison de Verre* in France, and of public relations associations in the Netherlands, Belgium, Norway, and Brazil.

The international committee hopes for a world-wide association of PR officials which will provide for "exchanging experiences and ideas," explaining PR work to those "outside the profession," and tackling the problems of: professional recognition; professional skill (including the pooling of the most recent results of experience and research and the publication of an *International Who's Who in Public Relations*); and professional ethics linking the codes now being compiled in several countries.

The Institute of Public Relations in Great Britain has done pioneering work basic to several of these matters. IPR has defined public relations practice as a "deliberate, planned, and sustained effort to establish and maintain mutual understanding between an organization and its public." Membership in IPR is limited to "principals" with a "responsibility for policy," doing work of "high quality and possessing sound experience."

PR Examination Developed

Recognition for the professional public relationist is provided by the Institute whose "fellows," highest echelon of IPR membership, may use the identification "FIPR" following their names. Full members are "MIPR" and a new tier within the Institute, to which fellows may be elected for exceptional work in the PR field, is under consideration by IPR this year. It will be the "Associate, Institute of Public Relations" (AIPR).

An IPR Education Committee has developed an outline for a two-part examination in public relations — a basis for crystalizing thinking about the education of and work standards for a public relations officer.

The first test requires the examinee to submit papers on: *press relations* (including all relevant forms of press, radio, television, and newsreels)—the organization of the press, writing news stories, issuing press materials, organizing press conferences and facility visits, press arrangements at public functions, photographic publicity, radio and television features, press inquiries and analyses; *printed material* — general knowledge of typography, layout and design, direct mail, information booklets, and house journals; *advertising*—uses of advertising in public relations, advertising media, planning a campaign; *opinion research*—uses in public relations, methods of sampling, interpretation; *visual aids* in public relations: exhibitions, displays and models, films and film strips, posters, wall charts, diagrams; *principles and practice of public relations* (including preparation for public speaking).

IPR's Education Committee thinks that the second examination—to be taken a minimum two years after the first—should include papers on problems of public relations—case histories; advanced principles and practice of public relations; structure and organization of government, industry, trade unions, voluntary organizations; and the economic and political setting for public relations—principles of economics, statistics, history of political ideas, and social history.

The Education Committee has approached several publishers about undertaking an acceptable text on public relations—a need in the United States, too by the way. At this writing, the standard PR text has not been published, but IPR reports it will "keep trying."

The British Institute of Public Relations has also come up with a study, "How much is a public relations officer worth?" Based on a strictly British scale, some typical salary figures have been suggested for PRO's with varying responsibilities and background experience.

Local Government Unit

One of the vital units of the IPR in Great Britain is the local government group. A Local Government Act of 1948 "confirmed and extended the powers of local authorities to spend money on public relations, and increased activity in the field." Duties of the MPR officer in British communities include "providing information for and fostering good relationships with the press; supervising inquiries; arranging public meetings, displays, exhibitions, lectures, visits, and other events; the making and/or showing

of films; contact with local organizations and obtaining general good will; preparing and advising on publications; providing information to Council about public opinion."

The local government unit has given particular attention to "Civic Print," subject of a short course for PR officers in cooperation with the British Federation of Master Printers. Individual communities in England have worked to "encourage the use of plain language in reports and correspondence of the local government." One borough has a "special words competition" among city hall staff members to develop easy-to-understand words in place of official gobbledygook. Several boroughs have drawn up style books which streamline official writing.

About 160 towns and counties operate "central information centers of varying kinds." As many as 60,000 questions—asked in person or by letter or telephone — are handled by each of these information centers which are described as "one of the must successful single features of local government public relations." Use of the "delegate conference" (a public relations council made up of representatives from various civic and service organizations in the community), of public meetings, and of suggestion boxes, are trends of MPR in Britain in 1954.

Two PR films, produced nationally for local use—"Local Government, a History in Pictures," and "How the Town Hall Works" — received wide circulation. And a 32-piece standard exhibition on local government had a spectacular premiere in London and traveled the country to be seen by 750,000 persons.

GPRA Plans Under McGuire

The work of the Government Public Relations Association in this country and Canada, started by a nucleus group in New York City in 1949-50, continues for 1954-55 under its newly elected president, David R. McGuire, Jr., Public Relations Director for the City of New Orleans.

GPRA projects for the new period include: preparation of a manual for city officials on the "use of and responsibilities involved in utilization of public service time on television and radio stations;" a technical bulletin on creation, function, and responsibilities of a public-relations department and/or department head for medium-sized cities; a survey of services desired of GPRA by leagues of cities; preparation and publication of a revised bibliography on GPR; an organized effort to get government groups to include a public relations topic on convention programs, and establishment of an award for outstanding achievement in the field.

As professional recognition of PR officers, books and examinations, and professional organizations develops here and in other countries of the world, skills, standards, and ethical definitions will emerge. And with these will come better qualified people who can contribute most to the relationships between the people in democratic countries and the governments which serve them.

Government officials in the United States and Canada who believe that their public-relations functions qualify them for membership in GPRA and who would like to be a part of this world-wide movement, are invited to write to the membership chairman, Hal Schneidman, Chief, Bureau of Information, City Hall, Philadelphia, Pa., for a brochure and a membership application.

MPR With a British Accent

Selected quotations from the quarterly Journal *of the Institute of Public Relations, published at London, England.*

● MPR Needed

". . . it would be a good thing to make the practice of public relations in local government a statutory function.—Local authorities now have the powers to practice specialized public relations, and the sooner more of them adopt a sustained-policy, regarding it as an essential function, the better."

● MPR's Worth

"Who can say how much public relations . . . (is worth)? What price can we set upon Elisha's counsel to Naaman? In estimating the value of public relations, one must not lose sight of its apparent worth to the user.—So how much is a public relations officer really worth? How high is the sky?"

● PRO's Status

"The public relations officer should be recognized as amongst the most important people within an organization and until this has been achieved, the public relations people cannot do fully what they would do and should do."

● PR's no "Cover Up"

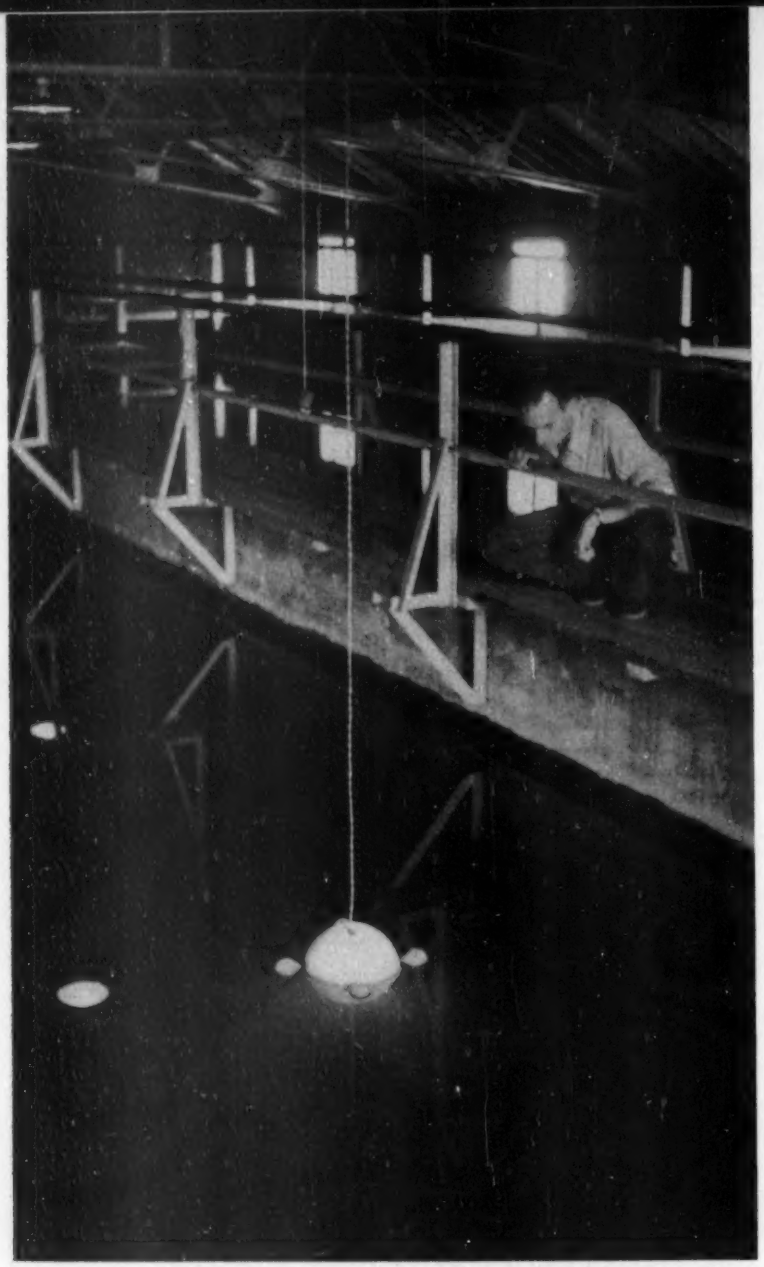
"Public relations is not a sort of wallpaper which can be used to slap over a filthy room to hide damp patches, cracks, and falling plaster.—No amount of public relations can make a bad policy work; but without public relations, the best policy and the best performance may fail to win understanding or support from the people for whom it is intended."

● PR in Print

"When you do anything on paper, you must do it properly.—In drafting a leaflet, the first task is to make it clear what it's all about . . . a second essential is that it be readable and recognizable . . . thirdly, the good leaflet must be professional—not 'left to the printer.'"

● Be Professional!

"Keep on looking at people. Wonder what they are thinking about. It is impossible to put over anything to an audience you don't understand. Never talk to yourself. Never be an amateur. And never underestimate the difficulties of this extremely difficult task."



The covered settling basin is equipped with a homemade floating light that illuminates the water and enables the operator to note the extent of the settling action.

COAGULATION Had to Come

Kennebunk, Maine, finds that there are times when water from a crystal-clear mountain stream needs chemical coagulation and filtration

BEFORE the State of Maine built its famous toll road, the Main Turnpike, the Kennebunk Water District had never experienced a real water-treatment problem. The District has the benefit of beautifully clear water, delivered to a convenient location by Branch Brook, and at an orderly rate that has not been affected by droughts or other climatic fluctuations.

The only problem that faced Superintendent L. G. Smith was the managing of his system so that it would serve adequately the varying summer population that comes north each year to enjoy the beautiful coastal area.

However, since 1946 and 1947, when the state decided to build a superhighway, Kennebunk found itself with a brand new set of waterworks problems. Whether or not it was the highway that caused the difficulties is controversial. However, Superintendent Smith harbors no doubt that this construction has so stirred up the upper reaches of the stream that the water became cloudy and turbid. Furthermore, the water has remained that way with a color count in its raw state that is measured at 240, much to the discomfort of the people served by the District.

Thus Mr. Smith's problem, regardless of the cause, was to rid the water of the turbidity.

Pressure Filters

The old plant passed the water through a set of Continental Jewel pressure filters without any preliminary coagulation and settling. The additions constructed to remove the turbidity simply supply these missing treatment features.

The plant draws water from the stream by the use of three Fairbanks-Morse close-coupled turbine pumps. One pump is rated at 550 gpm (gallons per minute), the second at 1,750 gpm, and the third at 1,150 gpm. The third pump can be operated by an auxiliary Continental gasoline engine which, when in operation, boosts the pump's capacity to 2,000 gpm. The water comes to the pumps through a 16-inch, cast-iron, intake line. As it leaves the pumps, the water receives a chloramine treatment that carries through the entire plant. A pair of Wallace & Tiernan chlorinators feed the chemicals to the water at a ratio of about four parts of chlorine to one of ammonia.

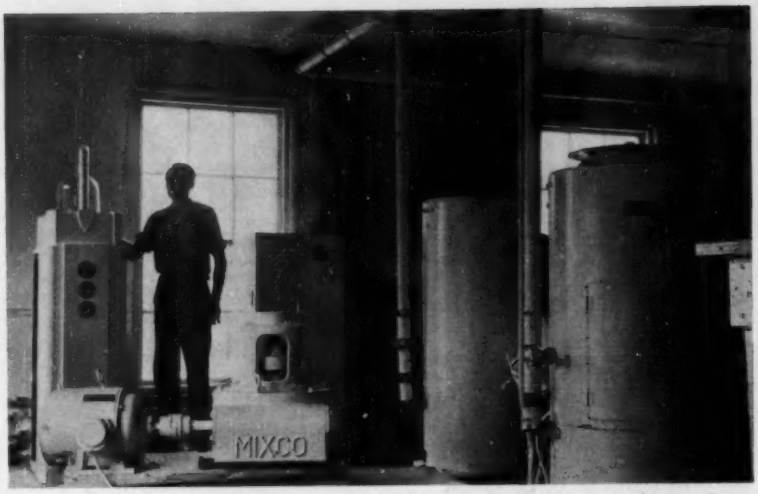
The water then proceeds to the chemical feed room where it receives alum and soda ash. Wallace & Tiernan dry chemical feeders make these

applications as the water passes to the settling basin. The settling basin is covered, a wise precaution in the rugged Maine climate. It measures 25 feet wide, 75 feet long, and 12 feet deep, and normally provides a 3-hour settling period when the plant operates at its rated 3-mgd capacity.

Settlement Observed

The operators have developed a rather unusual method of observing settlement in this basin. They have assembled a lighting device using a large reflector equipped with burned-out light bulbs that are screwed into the outer edge of the reflector. This device allows the assembly to float on the water. When the light is on, all the illumination is cast into the water. This enables the operator to see clearly how far the coagulant has dropped below the water surface.

The settled water then goes to the four pressure filters. These are 8 feet in diameter, 20 feet long, and are equipped with Anthrafilt instead of sand to facilitate backwashing. Normally, the filters operate under a pressure of 105 pounds per square inch, using water that has settled.



The new chemical feeders have plenty of work to do in the rebuilt treatment plant.

The water is boosted to the distribution system principally by an Allis-Chalmers single-stage centrifugal pump that is powered by a Cummins 125-hp diesel engine. The pump delivers 2,500 gpm against a head of 290 feet. A smaller Worthington centrifugal pump can be used at periods of low demand. This pump can supply 1,200 gpm against a 230-foot head.

The distribution system consists of 108 miles of main with pressures supported by three standpipes. The District operates under the general direction of three trustees: Lincoln Spencer, Robert Davis, and Ernest Hilton. Mr. Smith serves as general superintendent and treasurer.

Tri-County Regional Plan Association Aids Growing Pennsylvania Townships

POINTING to the rising costs of schools and municipal services in rapidly growing townships in Bucks, Delaware, and Montgomery counties, the Southeastern Pennsylvania Regional Planning Commission has issued a report showing how local communities can stretch their tax dollars by properly planning for future development.*

The report, "Planning and New Residential Development," describes how far-sighted planning for new development may help school authorities and township officials minimize the costs of public services, and at the same time assure a desirable type of community in the face of the tremendous pressures of residential, commercial, and industrial expansion.

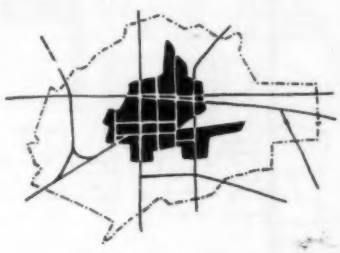
Building lots for more than 30,000 new homes were included in subdivision plans approved during 1952 and 1953 by the Bucks, Delaware, and Montgomery County Planning Commissions, according to the report. Between 1940 and 1950 there was a net gain of 69,000 dwellings in the tri-county area, and an 85% increase in the number of owner-occupied homes.

Analyzing the type of new subdivision development taking place in the tri-county area, the report stresses the difficulty of providing public services for widely scattered, small developments, and points to the public health dangers from inadequate water supply and sewage-disposal facilities.

The report includes the findings of a survey of families in new subdivisions in the King of Prussia area of Upper Merion Township, conducted by the Regional Planning Commission with volunteer student interviewers from the classes of Dr. Ira de A. Reid, Chairman of the Department of Sociology at Haverford College.

The role of regional planning in developing an integrated highway and expressway system, a regional park system, adequate water supply and flood-control measures, public transportation facilities and airports, and in fostering a desirable type of commercial and industrial development in the three county area, is outlined.

The Regional Planning Commission was created in 1952 through the joint action of the Boards of County Commissioners of the three counties. Its principal functions are to work with the County Planning Commissions in the development of a comprehensive plan for the area, and to develop planning standards, techniques, and procedures to be used as guides in the orderly growth and development of the tri-county area.



* The report is available from the Commission at Borough Hall, Bridgeport, Pa. Mimeo. 82 pp. $1.25 per copy.

What Cities Can Do to Improve

Close-In *Blighted Areas*

By GEORGE O. CONSOER
and
ARTHUR W. CONSOER
Consoer, Townsend & Associates
Consulting Engineers
Chicago, Ill.

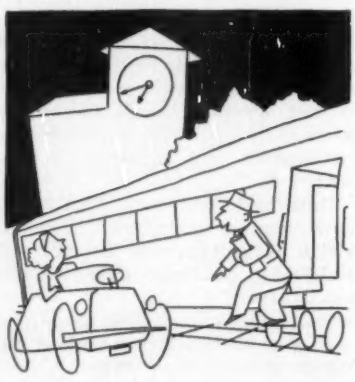
MANY DIVERSE FACTORS have contributed to the obsolescence of close-in residential areas in American cities. The trend towards their practical abandonment continues at an ever-increasing tempo. It is, therefore, becoming increasingly evident that nothing short of a very radical change in treatment of existing buildings and public improvements will have any appreciable effect toward reversing the prevailing downward trend in property values and outward appearances.

The Pro's and Con's—"Close-In" vs. Suburban Areas

For large numbers of people the close-in locations would be desirable for comfortable and economical living, provided some of the present unfavorable factors were removed.

Here are some of the opposing arguments commonly used by those residing in the competing close-in and suburban districts to account for their preference:

1. *In favor of close-in living*
   - (a) Convenient to transportation
   - (b) Convenient to amusement facilities
   - (c) Less time spent commuting; more time left for reading, recreation, study, exercise, etc.
   - (d) Like to see a little life on the streets, in restaurants, etc. Suburbs too quiet
   - (e) Long work or irregular work hours make commuting inconvenient
   - (f) Commuting too expensive
   - (g) Handy for traveling man. He is near home when he arrives at railroad depot
   - (h) Health won't stand longer hours made necessary by commuting
   - (i) Has lived there so long, does not care to move
   - (j) Easy access to superior medical and dental care.
2. *Against close-in living*
   - (a) Too noisy and dirty with too much smoke and fog
   - (b) Undesirable neighbors
   - (c) Inconvenient to outdoor recreation
   - (d) Unsafe for children
   - (e) Poor schools, undesirable fellow pupils
   - (f) Not enough light and air—houses too close
   - (g) No good buildings or neighborhoods available to suit middle-income bracket
   - (h) City zoning does not protect against commercial encroachments; buying and remodeling thus made too risky.
3. *In favor of suburban living*
   - (a) Cleaner and quieter
   - (b) More room, not so close to neighbors
   - (c) Chance for outdoor work in garden, etc., like to putter in recreation hours
   - (d) Better neighbors
   - (e) Closer to outdoor amusements and recreation
   - (f) Read paper on train—no time lost—or drive car in and enjoy the trip
   - (g) Prefer grass, flowers, trees, and shrubbery in landscape to being cooped up in closely built district
   - (h) Better schools
   - (i) Safer for children
   - (j) Children are healthier, when given more room for play
   - (k) Small suburban community is more neighborly and sociable
   - (l) Suburbs give better zoning protection than city; home investment is safer.
4. *Against suburban living*
   - (a) Back-and-forth trip wears one out
   - (b) Not enough time left for reading and recreation and exercise
   - (c) Don't like long winter in suburb—summer is all right, but too short
   - (d) Insufficient and sometimes irregular train service for traveling men or workers having long or irregular hours
   - (e) Too much work and expense maintaining separate house—cheaper to live in apartment. Latter argument now voided by present high income tax rate being advantageous to homeowners
   - (f) Hay fever and asthma worse in suburbs for some



(g) Cannot obtain servants, and restaurant accommodations poor

It is quite apparent that for people of normal vigor, working normal hours, and having a fair income, suburban living has marked advantages. For persons of limited strength, abnormal working hours, cosmopolites, childless families, single persons, etc., close-in living is preferable.

Toward a Workable Program

To date no city has begun to eliminate on any scale the disadvantages of the close-in blighted areas. The commonly discussed objections indicate a workable program would be about as follows:

1. Revival must take place over large areas at one time.
2. Make city zoning air tight and not changeable without something like a two-thirds vote in the definite area affected, with possibly contiguous areas having the right to object in a statutory defined type of court action.
3. Create a separate school district for the area to be revised; avoid crossing at grade of high traffic streets.
4. Restrict surface traffic on all except designated through streets.
5. Reduce smoke and noise nuisances.
6. Improve police protection, particularly in areas near boundaries of rehabilitated areas.
7. Separate building uses by well-thought-out demolition program with planning for new parks and playgrounds.

To accomplish a rebuilding of close-in areas will require that a city face the stern realities of what constitutes a neighborhood in which orderly people are willing to reside. Wishful thinking on half-way measures will probably accomplish little or nothing toward bringing back within the city limits a large number of people who believe their best interests are now served by getting out of the city into conditions more to their liking and where home investments are safer.

Most of the suggested remedies contemplate only action and rebuilding by governmental agencies or large semipublic restricted-income building corporations with power of condemnation. An alternate and supplementary method for preserving individual initiative and ownership should also be attempted.

To accomplish the latter will require initial action by the city itself. Probably the powers of condemnation of a city will have to be enlarged to include a right to condemn obsolescent and semiobsolescent improvements in various areas without requiring condemnation of land title. A workable program should allow the following:

1. Give cities the right to create a department for removal of obsolescent and nonconforming building improvements in blighted areas. Powers would have to be broad enough to include any building improvements which have a negative effect on complete revival and modernization of the neighborhood.
2. Provide funds for this department by general levy, special assessment, license levy, or other feasible source of income, such as redevelopment district general bonds.
3. Provide stringent zoning protection for the area to be improved.
4. Adopt a program which will gradually enlarge the limits of first areas selected, so that investors can look forward to improved, rather than deteriorating, surrounding developments.
5. Endeavor to create buffer zones for limits of improved areas — park strips, express highways, parkway arterials, public-housing developments, civic buildings, etc.
6. Tighten control over smoke, noise, and other nuisances.
7. Provide, if possible, that taxation for new building improvements will be at about one-third the standard rate until occupied. Equities of situation indicate this policy should obtain all over the city because tax is mainly for services not utilized by property with unoccupied buildings, and only a standby charge is justified.

From a revenue standpoint, I believe a city would be far ahead in the matter of tax solvency by adopting such a reasonable program for removal of obsolescent improvements. Increased taxation received from the improved properties should more than counterbalance sums spent for elimination of blighted areas. If condemnations can be based on strictly use values of the buildings in blighted areas, the buildings being worth practically nothing, condemnation costs will be restricted mainly to court costs and removal costs.

Capitalism seems to work best toward creating decent living conditions for workers in new communities. In old communities, the economic cycle seems to force someone into every old building no matter how decrepit. Forcible removal of these buildings at a reasonable rate should allow the economic cycle in building construction to maintain the upward instead of the downward trend.

Some way other than an earthquake or war will have to be tried to enable people to obtain and enjoy better living facilities. No one wants a repetition of the early thirties when living conditions retrogressed while large numbers of willing workers lived under conditions of enforced idleness and poverty.

In the past, the far greater proportion of new residential building has been accomplished by the small builder and local financing. The method of slum removal outlined here is essentially democratic in principle in that these smaller enterprises can compete and participate in the reconstruction.

The necessity for rigid zoning springs from both sociological and financing considerations. Reduction of risk in protected neighborhoods with consequent lowering of interest rates enables a worker to buy a better home with the same monthly payment as is required for an inferior product in an unsettled, insecure neighborhood. When viewed in that light, loose zoning is an injustice to the large majority of workers and investors and results in huge losses to the whole body politic.

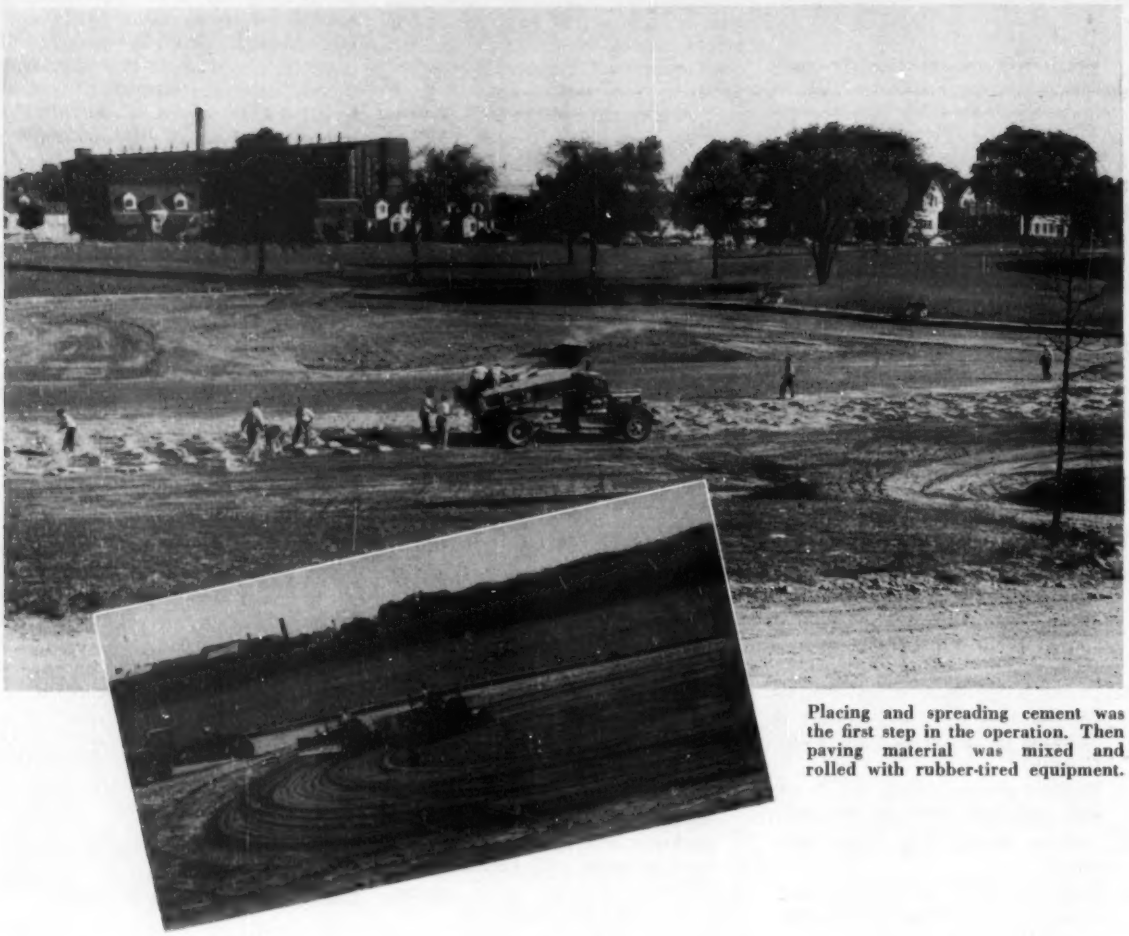
Vitality in City Planning

TO MY MIND the essential ingredient of successful city planning is *vitality*. The vitality comes from the fusion of two qualities—the expression of an idea in the social field, and the expression of creative design in the physical field. . .

If democracy is to survive, either in terms of social organization or of city planning, it cannot counter totalitarian ideas by mere defensive resistance . . . nor by escape into shelters and refuges; it must counter by means of *new* ideas—including ideas on housing and urban redevelopment. . . .

Even in this physical field there is no simple substitute for imagination.

WILLIAM HOLFORD
Professor of Town Planning in the University of London



Placing and spreading cement was the first step in the operation. Then paving material was mixed and rolled with rubber-tired equipment.

A Soil-Cement Lake Bottom

By JOHN L. FITZGERALD
City Manager
Clifton, N. J.

Clifton, transforms a marsh into a pool by resourceful construction

IN CLIFTON, a community of 65,000 in northern New Jersey, we have an attractive park area adjoining the high-school athletic field and library and embracing our recreational area and the War Memorial. A marshy pond, overgrown with cattails, occupied the center of this site and, in the past, had been a dumping place for miscellaneous refuse. When I was city engineer, I endeavored to transform this marsh into a pool which would reflect the character of adjacent facilities.

Our first problem was the removal of all soft and unsightly materials, which was easily accomplished with our excavating equipment. Our second problem was the selection of an inexpensive material to construct a hard bed for the pool.

William Holster, who was then assistant city engineer, and I investigated various types of suitable materials. Representatives of various engineering organizations were con-

sulted to enable us to evaluate these materials.

Finally, our choice was narrowed to soil cement, which offered the following advantages to the project under consideration.

1. Economy of construction
2. Ability to harden under water
3. Utilization of inexpensive materials available to the city
4. Speedy construction
5. Good structural properties
6. Freedom from oily surface-water films
7. Ease of cleaning with mechanized equipment.

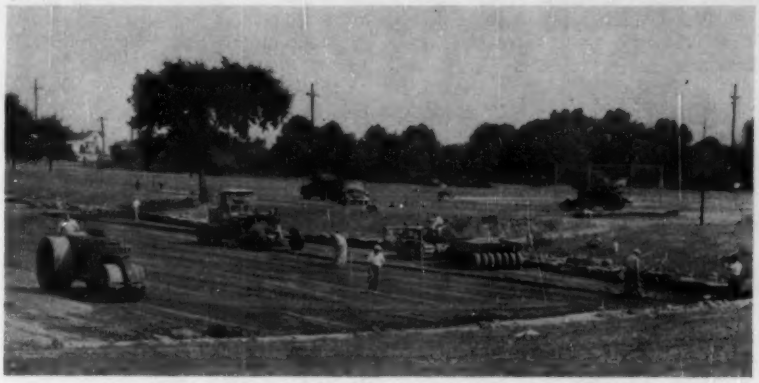
With this score chalked up, there could be no doubt about the desirability of soil cement. I turned over the task of working out the details to Bill Holster, who had been designated director of public works, following my appointment as city manager.

Specifications and construction schedules, that were drafted, were flexible enough so that contractors could bid on all or portions of the work required.

Nevertheless, a review of proposals received and a study of our Public Works Department schedule disclosed that the work could be completed at substantial savings if performed with city forces.

Soil Tests

Since soil cement requires proper cement quantities for various soil types, laboratory soil tests are essential. Although our city, like most other municipalities, is not equipped for this kind of testing, there are a number of commercial testing laboratories all over the country where this work can be done at a relatively low cost. For our city, we found that test cylinders with 10.5% cement by volume had a 28-day compressive strength of 750 pounds per square inch. This cement percentage was adequate for the soil over the entire area. Based on a 6-inch compacted depth this represents 0.48 of a bag of cement for each square yard.



After additional rolling, the lake bed received final shaping.

The area of the pool is approximately 8,000 square yards. The cost of cement was in excess of the legal limit of $1,000, our maximum material cost that can be negotiated without competitive bids. Therefore, bids were received and a contract awarded for furnishing the cement in carload lots at a local railroad siding.

The equipment required for the work included:

1 Seaman Pulvi-Mixer
1 Caterpillar tractor
1 pneumatic-tired roller
1 blade grader
1 nail drag
3 trucks
hoses and fittings

All equipment was city-owned except the Pulvi-Mixer and tire roller.

The construction had to be closely scheduled since it was desirable to have the day's work, including transportation of personnel and equipment to and from the garage, completed between 7:30 a.m. and 4:30 p.m. Consequently, the pool was divided into four areas of approximately 2,000 square yards for each day's work.

Work Schedule

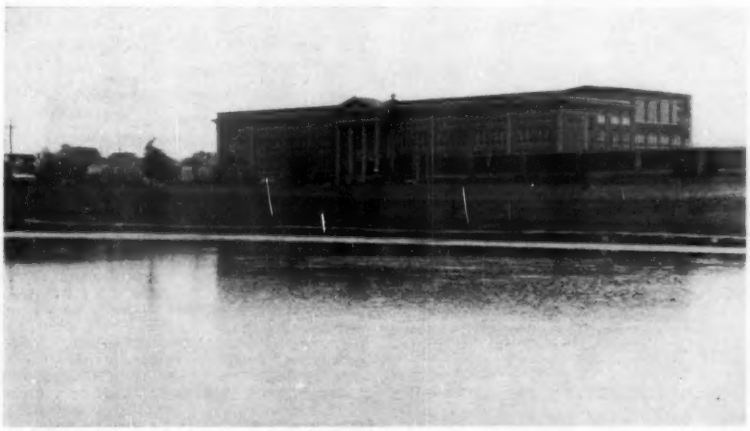
Daily operations started with the spreading of cement. The bags were dropped from the trucks two at a time at 4-foot intervals along a 10-foot-wide lane. To get accurate spotting of the bags, pieces of red ribbon were tied into the strands of a length of manila rope at the desired intervals. The bags were opened and the cement dumped out in transverse windrows for the full 10-foot width.

The windrows were then uniformly spread with the nail drag. Loading cement on the trucks the day before gave us an early start each morning. With operations under way at 8:00 a.m., 900 to 1,000 bags were spread in about two hours.

The Seaman Pulvi-Mixer, a self-propelled diesel unit, started mixing as soon as sufficient cement was spread to permit uninterrupted operations. By 11:30 each morning, dry mixing was complete, and all work halted for lunch.

Starting at noon each day, damp mixing got under way. Water was applied with five 1-inch hoses connected to a fire hydrant by means of a 2½-inch fire hose and an assembly of nipples, tees, and valves.

Wetting started on a strip approximately 12 feet wide and was continued along the length of the section being processed. The Pulvi-Mixer started at once to mix the



Finally, the completed pool, which is supported on a bed of soil cement.

water with the soil and cement and continued the process until the desired uniform moist condition was attained for the full depth. When this condition was reached, the pneumatic-tired roller, pulled by the tractor, started compacting the material. Damp mixing then began on the next strip.

Operations continued in this manner until the area was completely damp mixed. Moistening the soil on the previous day reduced the time for this operation to about two hours.

The combination of hoses and fittings worked out remarkably well and a surprising degree of uniformity was obtained. Care had to be exercised since the water could be applied faster than the mixer could incorporate it into the soil.

The grader started to shape up the material as soon as a sufficient area was compacted to allow freedom of movement. The steel-wheeled roller ironed out the surface as grades and shape were re-established. Our 10-ton three-wheeled roller was about 3 tons too heavy for this particular job and, as a result, the rear wheels cut ridges into the surface. A 1-ton tandem roller was used to smooth the ridges.

This sequence of operations continued, lane by lane, across the section being worked and, at times, three operations were simultaneously under way.

Curing was simple. The first few days' paving were sprinkled with the hoses already on the job. We then closed the outlets and filled the pool.

The project ended in complete fulfillment of our objectives and is recommended as a solution for similar paving needs.

Principles for Metropolitan Regions

By JOSEPH F. BASE
City Manager
Santa Clara, Calif.

ANY SCHEME of administrative control over the future development of our metropolitan centers must be sufficiently comprehensive and all-inclusive of the numerous factors involved in order that such control will contribute materially to the best interests of the whole degion.

Recognition of only the local phases of the problem cannot aid in properly shaping the growth of the whole in conformance with modern thought as to what shall constitute the ideal metropolitan community of the future. The groundwork must be laid upon a broad and firm basis or the future will not yield the expectations of the present generation in its struggle to create order out of the chaotic condition of the past.

We cannot continue to build and govern our communities without a comprehensive plan, an over-all specification, and definite long-range schedule. In projecting such a plan it is imperative that considerable thought be given to the condition of the undeveloped areas well in advance of their adoption for subdivision into residential, commercial, or industrial districts.

Legal Factors of Control

The legal aspects which should be considered involve primarily the following factors:

1. Recognition of the regional character of the problem.
2. Provisions for the permanent organization of the regional areas into a governmental subdivision having adequate powers to control the development within its boundaries.
3. Adequate consideration of the rural as well as urban population so that the interests of both may be respected and safeguarded.
4. The preparation and enforcement of regulations to govern all developments within the regional areas with the object of consolidating such developments into a comprehensive regional scheme.

Physical Factors of Control

The physical aspects involved should necessarily include a study of the following:

1. The entire area to be included in the regional organization, the boundaries of which are projected into the future as far as can be consistently estimated, preferably to the limits of the requirements of the ultimate maximum population.
2. A physical study of the area involved including:
   (a) Topography as to suitability for economic development
   (b) Agricultural possibilities of certain portions
   (c) Underground deposits of commercial value, possible of present or future development
   (d) Preparation of a regional master plan giving recognition to the foregoing.
3. A comprehensive long-range plan of major improvements and utilities extensions covering the entire regional area and conforming to the master plan, as for example:
   (a) Comprehensive sewerage systems, involving trunk and outfall lines, together with necessary treatment works
   (b) A similar plan for water supply and transmission systems.
4. Provisions for various public projects as proposed by the regional master plan, such as forest preserves and park areas, recreation areas, building restrictions, land uses and area and population density restrictions
5. Provisions for uniform building control to cover:
   (a) Regulation of type of buildings to conform to the use-districts as established by the regional zoning regulations
   (b) Stringent regulations for building construction as to fire safety, comfort, convenience, and health
   (c) Regulation of the architectural treatment of structure so far as legally possible

Regional Character of Urban Development

It is believed that the scope of the problem of planning control is so extensive and concerns the people at large to such a degree that it should come within the powers of the state. Enabling legislation should be provided which will create a Regional Planning Authority to include all the territory which may ultimately be one community. The boundaries of such a district should be carefully determined, accurately and legally described, platted, and recorded. No exception should be made of any incorporated places or other areas. The entire district should be created and treated as a whole.

EDITORIAL NOTE: Excerpts from a paper presented at the meeting of the Bay Area Chapter, of the American Society for Public Administration, Berkeley, Calif., on January 21. Other speakers at panel on "The Bay Area — One Community — Many Covernments," included Professor Albert Lepawsky and Mr. George Duggar, of the University of California; E. Robert Stallings of San Mateo, County Administrative Officer, and Professor Hubert Marshall of Stanford University.

By H. P. PETERSON
City Engineer
University Heights, Ohio

Does the sewer leak or not? The noise at the test tee will tell.

A Way to Locate Leaks in Sewers

A CITY BUILDS a high-standard sewerage system when sanitary and storm sewers are constructed separately. However, the point of separate construction is lost if storm-sewer leaks allow water to enter the sanitary sewer and flood basements.

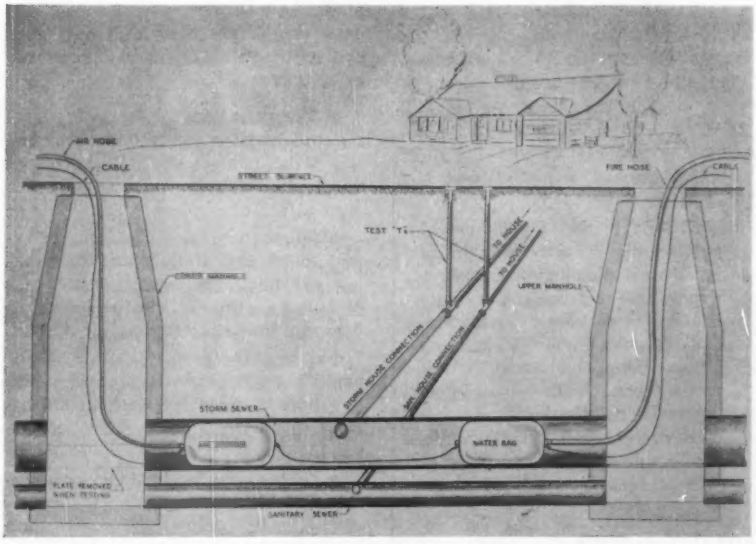
Such a situation confronted the city engineer of University Heights, a city of 12,000 in northern Ohio, when I assumed the post in 1948. After every rainfall, hundreds of homeowners found storm water backing into their basements, even though the sewer system had been designed to meet the high standard of separate construction.

There is a great deal of literature that gives all sorts of advice about methods of locating leaks in water mains but very little on how to stop leaks in sewers without rebuilding the mains. So we developed a method of testing the sewers to locate the leaks. We isolate a stretch of storm sewer, fill the isolated section with colored water and watch to see whether or not the water leaks into the sanitary sewer.

To isolate a length of storm sewer, we use the sewer-flushing bags made by the Turbine Sewer Machine Company of Milwaukee, Wis., that have been adapted for testing. A bag is filled with air, another with water. These bags are connected by a cable that spaces them far enough apart to isolate the section being tested. Cables, air hose, and water hose on the opposite ends of the bags extent out through the manholes so that the bags can be moved easily.

When the bags have been put into position, the air bag is first filled to a pressure of about 10 pounds and then the water bag is similarly filled. A fire hose feeds water into the bag, the water first having been colored with potassium permanganate. The colored water then flows from the bag into the isolated section of the sewer through an opening slightly smaller than the inlet, keeping the bag under pressure.

A man stationed at the house "test tees" listens for leaks under the street and observes the condition of the house connections. Another man checks and measures any increased flow in the sanitary sewer at the lower manhole. The results of these tests disclose the amount of leakage in the area being tested.



A diagram of the way to isolate a sewer section so that it can be tested for leaks.

1,300 Leaks Found

Since adopting this system, we have located and repaired over 1,300 leaks in the storm sewers and materially reduced flooded basements in the city. Over 70% of the house-connection "wyes" have been found to be faulty, either because of settling or poor construction.

The repair work requires about 34 man-hours per repair unit. Under best conditions, it is possible to handle repairs on three "wyes" per day. The work goes on continuously at an average cost of $100 per repair.

Advance Planning and Timing Of Local Public Works

Still an important stabilization device

By ROBINSON NEWCOMB
Robinson Newcomb Associates
Washington, D. C.

AN EVEN FLOW of public-works expenditures tends to promote stabilization of employment. It should be achieved without expanding and centralizing government. This necessitates that the local governments assume their full share of responsibility in any major public-works program that might need to be undertaken in the event of recession.

There is no need to embark upon boondoggling projects. There exists a vast reservoir of high-priority state and local public-works projects urgently required to fulfill immediate needs and those of the near future.

$75 Billion Nonfederal Backlog

The backlog of nonfederal construction needs is estimated to be in the neighborhood of $75,000,000,000. The current construction rate is scarcely one-half of what is needed to keep abreast of growth and to eliminate (over periods that vary with the urgency) within the next decade the backlog of needs for highways, schools, hospitals, sewer and water facilities, stream pollution, slum clearance, and the building of parks.

In prosperity, federal, state, and local public works account for about one-third of total public and private new construction, with state and local outlays about double the federal. For the calendar year 1953, it is estimated that outlays for state and local construction amounted to $7,100,000,000, and for federal projects to $4,100,000,000 out of total new construction, public and private, of $34,800,000,000.

The combined federal, state, and local outlays on public works, even without special effort to catch up on backlogs, are sufficiently large to provide significant opportunities to offset fluctuations in the private segment of investment, the most volatile component of gross national product. With some step-up for backlogs, the stabilization potential of public works becomes even clearer.

The determination of priorities for state and local public works must remain the exclusive responsibility of the state and local governments. This requires organization to assemble and to evaluate the thousands of conflicting claims upon local budgets. Many local units of government have initiated steps to expedite this aspect of their public-works programs. As the recent survey of the Municipal Finance Officers Association shows, there is a substantial amount of advance preparation of drawings and specifications already available. For maximum striking force, however, much still remains to be done.

Federal Action Needed

To be prepared to facilitate local public-works programs, however, the federal government should take two steps, the first immediately, and the second as circumstances require. The immediate step is to provide a small amount of funds to help finance the preparation of drawings and specifications. This has some precedent in legislation enacted by Congress in 1944 and 1949. Funds for this purpose were requested in the 1955 federal budget.

THE KEY to the effective use of public works as a stabilizing device is advance planning and timing. Expenditures for public works can be timed to mitigate economic fluctuations only if there is in being a reservoir of blueprints. Without preparedness, public works is an uncertain stabilization force, but with preparedness, public works can become a major second line of defense against recession.

The second step relates to the financing of local public works. It involves categories currently receiving federal aid as well as those which do not. If economic activity should deteriorate to the point where it becomes prudent to accelerate public-works schedules, local revenues will shrink sharply with declining national income.

The upshot is, that unless local governments can borrow, and borrow on favorable terms, they will be reluctant to activate their public-works programs, even if by careful planning they are otherwise ready to do so.

If the process of financing is to be facilitated by the federal government, the Congress will need to agree with the state and local governments on the feasible measures to be taken:

- They can take the form of federal guarantees of state and local securities with respect to both principal and interest. This would enlarge the area of tax exemption.
- They may take the form of direct loans, and if they do, the making of the loans must not be permitted to exhaust the time saved through planning the public works.
- They can take the form of matching grants, which raises the question of state and local fiscal capacities to raise their share of the funds.
- There are limitations and unsolved problems connected with each of these approaches, and while none

(*Continued on page* 159)

THE FIRST 12 HOURS

TEN STEPS FOR MUNICIPAL DISASTER RELIEF

By C. F. ROWLAND
Civil Defense Coordinator
The American National Red Cross
National Headquarters
Washington, D. C.

NO ONE CAN FORETELL when and where disasters will strike. Last year more than 400 tornadoes occurred, over twice the yearly average. Floods were fewer, but the occurrence of hurricanes was about normal.

Most disasters occur suddenly and without warning such as tornadoes, earthquakes and explosions. Certain kinds allow some time for preparation, especially floods and hurricanes. But regardless of warning, the destructive results are generally the same—people are killed and injured, buildings destroyed and damaged and community life disrupted.

Great responsibility rests upon local government authority when disaster strikes. In such emergencies the community naturally looks to its chief executive for leadership and guidance, though he suddenly finds himself confronted with a multiplicity of problems never dreamed of. How he approaches these problems during the first 12 hours can mean the difference between a long period of chaos and an orderly process of restoration of community life.

In Case of Disaster— A Plan of Action

For those cities that have not developed an adequate disaster plan, the American Red Cross, which has served as the nation's disaster-relief agency for over 70 years, lists the following 10 steps that should be taken by the Mayor or chief executive immediately following a disaster:

1. Order police department to throw up road blocks around the affected area to prevent traffic congestion; see that streets from area to hospitals are kept open for rapid movement of ambulances; rope off and place guards around hazardous buildings; request radio and TV stations to advise sightseers to remain away from the affected area.

2. Request governor to assign state police and National Guard troops, if necessary, to supplement local police force.

3. Assign responsibility to chief of police, city engineer, or other official to make immediate survey of the area to ascertain degree of damage and destruction. Do not rely on rumors or unofficial information.

4. Inform governor; advise him survey is under way and that a more complete report will follow when completed. If the disaster is of such scope that federal assistance will be required, the governor may wish to ask the President to declare the catastrophe a "major disaster" under Public Law 875. Request for such assistance must be made by the Governor direct to the President. *

5. Contact local Red Cross chapter to determine extent of their activities in providing emergency relief and inform them you are issuing proclamation naming Red Cross as official agency for meeting the welfare needs of the disaster victims. (Red Cross chapters have standing authority from their national headquarters to meet emergency needs of disaster sufferers out of Red Cross funds.)

6. Appoint a disaster coordinator to coordinate the efforts of all participating agencies, public and private, and to keep the mayor's office fully informed of their activities. This person may be the local civil-defense director or other public official.

7. Activate heads of city departments to take necessary action to meet emergency within their departments.

8. Within six hours after disaster occurs arrange for a meeting of heads of city departments, Red Cross disaster chairman, civil-defense director and representatives from other participating groups to report on action taken, their plans, and to discuss still existing problems. After meeting, release to press, radio, and TV stations complete report on situation.

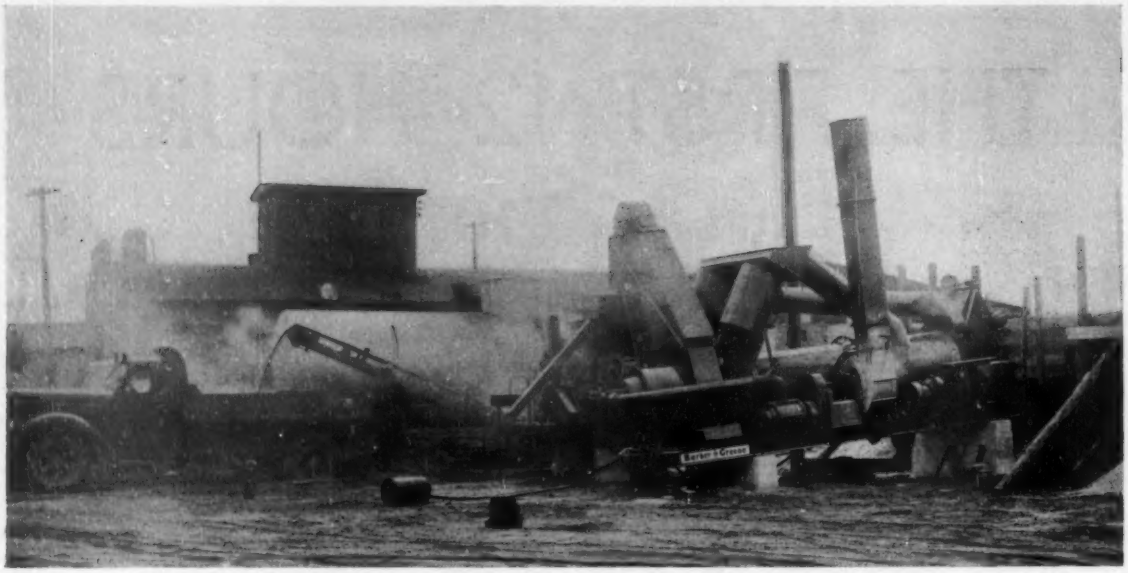
9. If heavy rescue equipment, portable generators, etc., are required from Army or other federal agency, make request through your state civil-defense office.

10. Remember you cannot do everything at once or be every place at the same time. Rely on your disaster coordinator as your official informer and adviser. Remain in your established headquarters at least until the above nine steps have been executed.

Every Community Must Be Prepared

No community is immune from disaster. None can afford to neglect preparedness planning. A total community plan which outlines the specific responsibilities of government and private agencies will do a great deal to lessen confusion and to bring about the most effective cooperation "when disaster strikes."

* See comprehensive article, "When Disaster Strikes," THE AMERICAN CITY, September 1953, p. 98.



Cheboygan's new Barber-Greene asphalt plant produces hot mix to exact specifications.

An Asphalt Plant For a Small City

The city constructs this sort of smooth-surfaced street at $5.50 per square yard.

Cheboygan, Mich., shows savings in street construction and maintenance by operating its own asphalt plant

By DONALD L. BROWN
City Manager
Cheboygan, Mich.

FREQUENTLY, we hear the question asked in municipal circles, "How small can a city be and still justify a municipally owned asphalt paving plant?" Of course, conditions differ with each city. Nevertheless, we find that such a plant is a sound investment for our city of 6,000.

We have operated our plant since late 1952, paving, resurfacing, and maintaining our streets. The economies effected by this work have been so great that one more year's operation will pay for the plant, including all depreciation, insurance, and maintenance.

Cheboygan lies at the tip of Michigan's lower peninsula in the heart of the resort area in the Straits of Mackinac. We have 41 miles of streets. Less than 3 miles were permanently paved up to the time that the plant was purchased, if we do not include the paved stretches of U. S. Highways 23 and 27 that are maintained by the state.

In the days before we acquired our asphalt plant and paving machine, our street crews limited their work to surface treatment, using cutback asphalt and rock chips. By 1952, approximately 25 miles of our streets had received this type of temporary treatment. However, the severe winter conditions and the increasing numbers and weight of vehicles on Cheboygan's streets made more effective and more permanent paving methods mandatory.

This prompted us to consider whether we should award contracts for the work or whether we should procure equipment and do the work with city crews. Several factors influenced our decision to handle the work with our own men.

First, force account allowed us greater flexibility. Contract work be-

comes impractical when small jobs are involved since every contract job involves certain fixed costs of setup, operation, and supervision. Plans and specifications are difficult to prepare for small jobs and force us into a wasteful use of engineering manpower.

Moreover, a city-owned plant permits us to produce patch mixes before and after the regular paving season, insuring a constant supply of hot mixes of proper specification. Then, finally and fundamentally, the cost figures themselves offer positive evidence that the city would save money by owning the equipment. Our experience has borne out the wisdom and economy of this policy.

Since the equipment was not set up until September 1952, little remained to be done during that year's paving season. However, the plant was operated and two blocks were paved, using the city's newly acquired Barber-Greene Model 840 asphalt plant and bituminous finisher. In addition, patch mix for the winter was prepared and stockpiled. Then the plant was closed for the year.

Program Grows

The 1953 season was a booming one for the plant and finishing machine. Together, they placed 3,267 tons of hot-mix asphalt which provided 34,408 square yards of machine-finished streets. This means paving 30 blocks of paved streets, varying in width from 20 to 40 feet.

In addition, the plant produced more than 500 tons of emulsion mix which was placed on school playgrounds. And more than 800 tons of patching mix was stockpiled for use after the regular season. The street-paving mixes were patterned to the following specifications with modifications to suit local conditions:

Michigan Highway Department	F-1
Asphalt Institute	A-29V
Asphalt Institute emulsion	CL-4D

The mix used for patching followed Michigan State specifications CPO.

In the mixing process, the Barber-Greene plant produced an average of 30 to 35 tons per hour. The hot mixes were used on city streets where heavy traffic was common and the emulsion was used on residential streets with lighter traffic loads. Plans for this year call for paving an additional 22 blocks in a similar manner.

Costs

As mentioned previously, the costs show a decidedly favorable balance for the city. In place, the machine-finished, hot mix costs the city only $5.50 per ton. This cost is itemized as follows:

Aggregate	$1.10
Asphalt	1.90
Labor	2.00
Insurance, fuel, depreciation, etc.	.50
Total	$5.50

The favorable cost of the aggregate is made possible by purchasing it from a commercial source, delivered by freighter to the city's dock. In addition to these costs, $47.51 was expended for repair parts for the various plant components, and $8.40 to install them. This represents the entire repair cost for the 1953 program. Finally, some $400 annually is spent in winterizing the equipment and putting it back in operation in the spring. If charged against plant production, this would increase the cost per ton for the 1953 season by something less than 10 cents.

Although the Barber-Greene plant has both a dryer and mixer, only one man is required to operate both units. Another man tends the steam boiler and supervises the asphalt supply, while two others are employed at the aggregate feed, bulldozing the piles and doing general clean-up work.

Finisher Crew

The finisher has a two-man crew including the operator and the screed man. They are assisted by two general helpers. The city engineer also stations himself at the finisher, maintaining an inspection program and providing over-all supervision. Cheboygan operates five city-owned trucks that haul mix from the plant to the finisher.

The plant has been a fine investment for better streets at lower costs for Cheboygan. As we mentioned earlier, circumstances in each individual city must dictate whether the purchase of such a plant is practicable. Circumstances in our city of only 6,000 people certainly have demonstrated that it is.

Mayor John Werner, J. F. Doyle, city engineer, and Harold Gaynor, public works superintendent, observe the preparation of surfacing material in the finishing machine.

Connecticut Annual Report Winners Announced

THE TOWNS of Lyme, Bethany, Bethel, Windsor, Middletown, Greenwich, and New Haven were singled out for highest awards for their 1953 annual reports, in the yearly report contest conducted by the University of Connecticut's Institute of Public Service.

The reports of Bethany and New Haven received highest awards in their respective categories for the second consecutive year. Middletown and Greenwich were tied for highest honors in the 20,000 to 50,000 class.

A panel of three judges scanned nearly 150 annual town reports for superior content, understandability, utility and attractiveness. Reports were classified in six population categories for judging, and three awards were made in each category.

The judges included Mrs. Ruth Dadourian, prominent West Hartford civic leader; Thomas J. Keena, Hartford *Courant* editorial writer; and Carl Less, editor of the *Town Times*, weekly newspaper serving the Watertown-Oakville area.

The highest-award winners in each division will be entered in the New England Report Contest, sponsored by the New England Council.

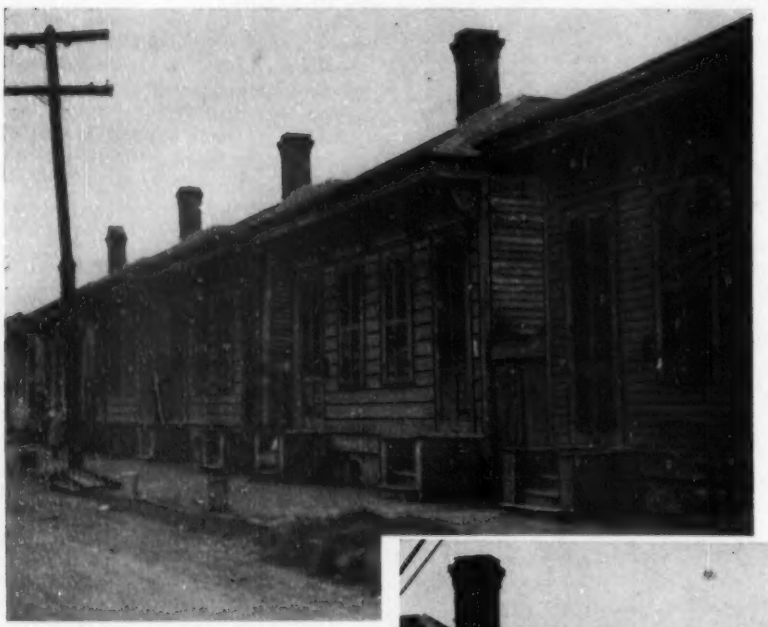
New Orleans Begins Job of HOUSING REHABILITATION

By VERDUN R. DASTE
Department of Housing Improvement and Slum Prevention
New Orleans, La.

A COMBINATION OF ELEMENTS has left New Orleans with a staggering number of substandard houses. It is estimated that 45,000 dwelling units, housing about 4 out of every 10 residents of the city, do not meet minimum standards of livability, health, welfare, and safety.

Complicating the rehabilitation task is New Orleans' age, its critically overcrowded condition, high-water table, heavy rainfall, and mild climate. A comparatively high percentage of the houses were built before the turn of the century, and a good number date back more than 100 years. Available housing is almost 100% occupied, thus making relocation of displaced persons very difficult. The high-water table and heavy rainfall cause many structures, old and new alike, to sink badly, and drainage is a constant problem.

The mild climate makes possible the occupancy of houses which would



← Before

Before work began last fall on New Orleans' housing improvement "demonstration block," these century-old houses were like thousands of others in the city—dirty, dilapidated, in need of paint and a bit of major modernizing. None of them had an inside bathroom. Only water supply was in the backyards, where an outside toilet, a single spigot and slop sink were standard equipment.

After →

The completed project, including the new street, which was hard-surfaced by the city as its contribution. Now, each of the five dwelling units in the "demonstration block" has a modern bath and kitchen, with hot and cold running water, new screens, all new electrical wiring, paved alleyways, backyard work area and sidewalks, new guttering and reconditioned roof. All rooms in the project have been cleaned and painted, and each building insect and rat-proofed. Front and back steps are precast concrete. Yards are surrounded by lifetime wire mesh fencing.

be unfit for human habitation in colder parts of the country. Even the natural insulation value of a sound structure can be dispensed with, and the discomfort to occupants isn't too great.

To overcome the ravages of time, weather, and wear and tear, the city established a separate Department of Housing Improvement and Slum Prevention and charged it with the duty of enforcing and encouraging owners to comply with at least the minimum standards already on the law books. These requirements, it was felt, were sufficient in most respects except that they were not being complied with.

This new department borrowed heavily from the slum-fighting experiences of Baltimore and went to work in earnest. Established by law last August and in operation the following month, the Department had sparked the complete rehabilitation of a "demonstration block" of five slum houses and through systematic inspections had a 45-square blighted area well on the way to minimum standards compliance before the year's end.

A Nine-Year Program

This auspicious beginning of a program aimed at rehabilitation of 5,000 dwelling units each year for the next nine years was no spontaneous achievement. Months of research and planning by a Citizens' Study Committee on Housing, a group appointed by the Mayor and approved by the Commission Council, led to the creation of the necessary legislation and the new department to cope with the big problem. The Chamber of Commerce instigated initial action by petitioning the city for action through a citizens' group.

A 28-member Mayor's Citizens' Advisory Council on Housing Improvement has since replaced the study committee. Heading both the original and present bodies is Clifford F. Favrot, a New Orleans capitalist with a flare for directing large operations. The present committee, as well as the new city department, have taken up where the temporary city organization and citizens' group left off. The two work closely together — the citizens in an advisory capacity, helping to iron out difficulties pertaining to legal, financial, technical, educational, relocation and similar matters, and the department as the working organization which carries out the planning, inspection, education work, legal routines, and paper work necessary to the whole operation.

G. Yates Cook, author of the Baltimore Plan for housing rehabilitation, who was brought to New Orleans to organize the program and set up the department on the advice of the citizens' study committee, has been replaced by a permanent director, Shelton P. Hubbard, a retired Army colonel late of the Korean conflict. Prior to Korea, Colonel Hubbard was director of the city's Department of Sanitation.

Two assistant directors, one in charge of inspections and the other in charge of public relations and education work, four clerical workers, and 18 inspectors comprise the department's staff.

How the Program Operates

In sequence, actual operational steps in the program are simple. The department obtains from the City Planning and Zoning Commission recommendations as to definite zones in which to operate. This, and other close cooperation between the department and city planners, prevents conflicts which would work a hardship on property owners as well as confusion between city departments.

At present, five zones in different parts of the city have been approved for housing improvement action. Three teams of five inspectors each are now working in all five areas. As a team, these men inspect each dwelling unit in each building for structural, fire prevention, plumbing, electrical, or sanitation violations. No building used for residential purposes in any of the areas is overlooked.

Defects serious enough to constitute violations of the city's minimum standards laws or building code are noted on department records. A single notice, listing all violations found on each parcel of property, is sent by registered mail to the owner. He is ordered to comply with the law within a reasonable time limit—depending upon the amount of time needed to do the type of corrective work called for.

Position of the Property Owner

At the owner's option, he may appear at a preliminary hearing to gain more specific information about the requirements, or to seek aid, be it in financing or in otherwise helping to get the rehabilitation work done.

The owner is advised to secure at least three bids from contractors who have been checked with the Better Business Bureau. The department reviews the bids from the contractors, if the owner permits, to make sure the proper work called for in the violations' notice is proposed, as well as to prevent possible fraud. Inspections are again made after work is completed.

The minimum standards laws of New Orleans, essentially, provide for cleanliness, inside bathing and toilet facilities, ventilation and a minimum of 400 cubic feet of air space in sleeping rooms per person, adequate artificial and natural lighting, adequate water supply and drainage in kitchens, structural soundness, adequate protection from the elements by painting and other covering, and safe heating.

Owners who are required to make repairs have one common problem—financing. Bulk of the loans being used in the program are FHA-insured, Title 1, pertaining to repair work. Present limitations of Title 1 loans are $2,500 and three years for repayment.

Officials of the Federal Housing Administration and others in the federal service concerned with urban housing, have been petitioned to increase the maximum amount and repayment period. To date, there have been definite indications that FHA loan restrictions pertaining to rehabilitation work will be eased.

Federal Housing Officials Favor New Orlean's Program

Federal officials have visited New Orleans and indicated their desire to see the city's effort assisted. Among the visiting officials were HHFA Administrator Albert M. Cole, FHA Administrator Guy Hollyday, and Governor Sherman Adams, Assistant to President Eisenhower.

Repayment of these loans is hardly a problem, since increased rents are collected on renovated dwelling units. Most of New Orleans' blighted housing exists in double dwellings, part of each being held for rental. Tenants, generally, are willing to pay increased rent in return for the definite improvements that result.

The rent increase usually is equal to the amount of the monthly payments the owner must make on his loan. In many cases the rent increase is greater than the loan payments, and the increase is seldom beyond the amount a tenant is willing to pay in return for improvements made.

Though still in the embryo stage, New Orleans' great experiment seems headed in the right direction. The mobilization of the citizenry for a carefully planned and programmed attack on substandard houses is producing substantial benefits to the city government.

The Elm Street parking lot, which is metered by 124 Mark-Time Twin parking meters for commuters.

Summit Plan Grapples With PARKING PROBLEMS

By PERCIVAL M. BLAND
Mayor
Summit, N. J.

AS A RESULT of numerous conferences between the Common Council, the Mayor, and the heads of several of the city departments, a parking study was made by City Engineer Francis A. Murray and me. In November 1952 our findings and recommendations were submitted to the Common Council which adopted the report as a guide toward the solution of the parking problem in Summit.

This study was divided into two sections, a review of the traffic restrictions and parking on the city streets, and off-street parking. The first section is detailed and peculiar to the City of Summit, and little will be made of it here except to emphasize the importance of a constant reappraisal of both traffic restrictions and on-street parking regulations as conditions change.

The off-street parking section is based on the philosophy that "off-street parking should be on a pay-as-you-go basis and that there are to be

The Maple Street parking lot, also for commuters, is metered by 160 Mark-Time Twin parking meters.

no free municipal parking lots in the City of Summit."

With this in mind, the Council included in the 1953 budget in the Capital Improvement Fund $66,000 for the construction of parking lots.

For Long-Time Parkers

Of the three lots proposed for 1953, two have been completed. Maple Street Parking Lot, before its renovation, was a gravel-surfaced lot in which the cars parked as best they could. During the spring and winter months, it was wet and muddy underfoot. For $28,000 this lot was hard-surfaced, drained, lighted, and metered. With roomy parking spaces, adequately marked, this lot now accommodates 160 cars.

About one-half block away and immediately across from the Delaware, Lackawanna and Western Railroad station, the city purchased land and constructed a lot known as the Elm Street Parking Lot, sufficient to accommodate 124 cars. The total cost of this hard-surfaced, drained and lighted lot (including the cost of the land) was $32,200.

In each of these lots, coin-changing machines were installed for the convenience of the public.

Both these lots are designed primarily for commuter and all-day parkers. They are metered at a rate of 3 hours for 1 nickel, 6 hours for 2 nickels, 9 hours for 3 nickels and 12 hours for 4 nickels. The hours of enforcement are from 8 a.m. to 6 p.m., Mondays to Saturdays, inclusive. This enables a parker to leave his car as early as 6 a.m. and still not be in violation at the end of the day. On Sundays both of these lots are available for use by the parishioners of nearby churches. To prevent the lots from being used as open-air garages, no parking is permitted from 2 a.m. to 5 a.m.

The lots were in complete operation by the latter part of September 1953, and it is expected that each lot will produce for the city an annual revenue of between $4,000 and $5,000.

Two more lots are under consideration as a part of the complete program.

Business-District Parking Lot

In 1951, the city purchased for $40,000 a group of substandard houses near the center of the business district. The city's purpose was to rid the area of unsightly and substandard dwellings, and to provide shoppers with a parking lot near the business district. To cost about $9,500, this lot will accommodate 45 cars. The cost of this project is included in the 1954 city budget.

The last step in the attempt to solve the commuter and all-day parking problem is the construction of a lot on the site of our present temporary veterans' housing units, which are directly across from the D. L. & W. R. R. station. This lot will hold 182 cars and will cost approximately $35,000 at present prices. No provision has been made for this project in the 1954 city budget.

The City of Summit recognizes that it has not solved the parking problem completely. By keeping close contact with traffic as it develops, however, and by having a definite plan of action to meet demands, the Council can grapple intelligently with this growing problem of parking.

Battlegrounds of Local and State Government in Pennsylvania

THIS WAS the challenging title of an address by H. F. Alderfer, Executive Secretary, Institute of Local Government, Pennsylvania State University, at a Conference on Financing Government Services, held at Lafayette College, Easton, Pa., recently.

In introducing his topic, Mr. Alderfer pointed out that the struggle is concerned with centralization of governmental power in the state as against freedom of the local units. He said, "Great questions of human liberty and progress are involved although the words heard in the contest are more mundane: taxes, powers, functions, controls, service, administration; or more to the point—highways, relief, schools, police, fire protection. This conflict is being waged all along the line; the fate of every county, every city and borough, every township in Pennsylvania is at stake."

In conclusion, Mr. Alderfer suggested several specific proposals for improved and stronger local government in Pennsylvania (many of which have applicability in many other states). Here are the planks in Mr. Alderfer's program:

1. Legislation providing electors in all cities with the power to vote on the question of adopting council-manager form, the strong-mayor form, or any other generally accepted form of American city government. This is home rule that citizens deserve. At present, Philadelphia, Pittsburgh, and Scranton have a strong-mayor type, while all 47 cities of the third class must have the commission form of government.

2. Legislation providing the voters in boroughs and townships with the right to vote on the adoption of the council-manager plan. At present, these units may have manager government by ordinance of the governing body.

3. Reorganization of the structure of county government to eliminate most of the elective offices except the county commissioners who would be the governing body of the county. Legislation providing electors with the right to vote on the adoption of the county-manager plan.

4. The consolidation of the 1,500 townships of the second class into 500 townships by legislation which would make consolidation optional but which would make it attractive to citizens and township officials.

5. The development of a modern program for rural road building and maintenance under the leadership of the county, and with the technical advice of the State Department of Highways. Both township and boroughs under 2,500 population could work out joint programs with the county to be able to utilize modern machinery and trained personnel.

6. A more equitable share of the gasoline tax for the cities, boroughs, and townships of the first class to support their urban street program; a sharing by the counties and the townships of the second class of the one-half cent gasoline tax now going to counties.

7. The development of a county health program along the lines worked out by the State Department of Health. This should not mean the elimination of present health organizations in cities and boroughs — where they are adequate—but their union with the county in an over-all program.

8. Firm opposition against further restriction of Act 481, the modernization of assessment procedure in counties, and opposition to the exemption of machinery from local assessment until further study and possible adjustments which would balance any reduction in the tax resources within the county are worked out.

9. Legislation allowing the development of a federation of local units in a metropolitan area for particular functions of government.

10. A survey, to be made by the Local Government Commission, of local functions with recommendations for their more reasonable allocation in light of modern needs.

11. A share for local government in the administration and financing of relief in Pennsylvania.

12. A unified and an aggressive program by the local government associations of the state.

The Sanitary Fill Series

The Area Method of Landfill

A tractor and Bullclam combination at Sanford's landfill site take over compacting refuse and cover it with earth.

By *City Manager* THOMAS L. LEMON, *reporting for Sanford, Fla.*
Town Engineer BRENT REMSBURG, *for South Boston, Va.*
City Engineer ROBERT J. POSS, *for Marinette, Wis.*

IN EARLIER ISSUES, THE AMERICAN CITY has reported on the techniques for building a sanitary fill by the trench and ramp methods (See January and February 1954). City officials have available a third alternative in the area method of construction; this technique permits them to use the fill on irregular, gullied, or marshy wasteland that rules out the excavation required for the more orderly trenches and ramps.

In the area method, the refuse is simply packed in place with a tractor or bulldozer and then covered with earth each day. If the operators keep the layer of refuse to a maximum of 6 feet, they will have less difficulty in thoroughly compacting the lifts, thus reducing subsequent settlement. This approach also reduces the time required for bacterial action to take place, and allows the city to use the completed fill safely after only a few years' wait.

Sanford, Fla.

In Sanford, Fla., marshy wasteland and a generally high water table makes the use of the area fill mandatory. Excavation to form a trench or a ramp is not practical on this site.

The refuse fill is built in 6-foot layers. After the trucks dump their loads of waste in the selected area, an International Harvester TD–14 crawler tractor equipped with a Bullclam attachment compacts it into a dense mass. The tractor then spreads daily a 12-inch earth cover, thick enough to prevent rats from burrowing through to the refuse and to positively kill any fly larvae that might develop.

The refuse crews collect garbage twice each week from all homes, and other rubbish once a week. Daily collections are made from business establishments. Thus the fill receives approximately 11,600 tons of mixed refuse per year, contributed by 12,000 persons. One man alone works on the fill, serving as landfill supervisor and tractor operator.

So far, Sanford has found that its fill progress doesn't cost a cent. Actually, it represents an investment. Out-of-the-pocket operating costs run to about 60.3 cents per ton of refuse covered. But there are many costs that fill-and-cover have competelely eliminated.

For example, refuse-collection units used to make a 9-mile round trip to a foul-smelling, unsightly open dump. These trips are no longer necessary. Estimating present truck-hauling costs at only 10 cents per mile for a 3-ton load, the city is effecting a savings of 30 cents per ton in trucking charges alone.

Sanford's Tom Lemon and James Dunn, superintendent of sanitation (left to right), explain operations to a delegation from Bartow, Fla., which includes: City Manager C. R. Odom; City Commissioner E. F. Brower; Finley Mason, an interested citizen, and City Engineer Warren Knowles.

Sanford's Pak-Mor refuse truck delivers its load to the fill.

The operation will raise the land elevation about 6 feet.

Then, at one time, the city operated an old incinerator at a cost of $1.25 per ton of refuse burned. This cost, too, the landfill has wiped out. Moreover, a lot of wasteland is being put to good, useful purposes. Good land is valuable in Sanford, and the city's ability to turn barren land into valuable property is an investment that will continue to pay off in the future.

Finally, there is the matter of respect that this method of sanitation has earned for Sanford among neighboring cities. Sanford is now regularly acting as host to other city officials who are trying to set a policy for refuse disposal and who are using this city's experiences as a guide, at the suggestion of various health authorities. Although the respect of other municipal administrators cannot be valued in dollars and cents, it nevertheless is very real.

South Boston, Va.

South Boston, a community of 7,000 in southern Virginia, is also using the area-type fill to convert 23 acres to productive purposes. The barren land, stripped of its topsoil, consists of sandy clay. The city builds the fills in 5-foot lifts. These relatively thin layers allow the operators to compact the refuse so that very little settlement takes place.

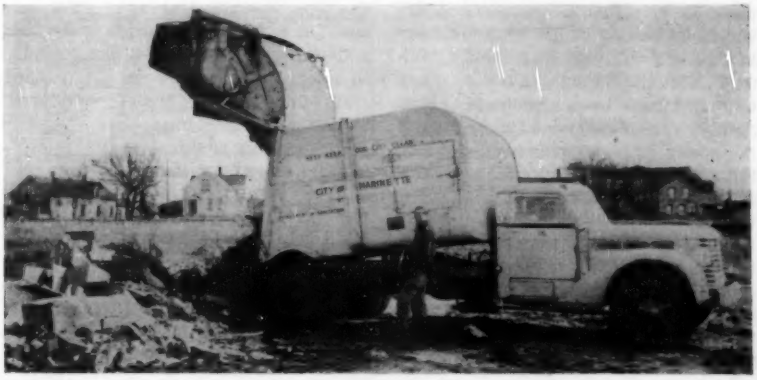
At present, a Caterpillar D-6 crawler tractor equipped with a bulldozer blade is doing all the work. Cover material is bulldozed from an adjoining hill. However, because the work is progressing farther away from the supply of cover material, a 7½-yard pan scraper probably will be supplied in the near future to help haul earth and provide a more efficient way of doing the work.

This city's fill, in use for more than seven years, receives about 7,000 cubic yards of refuse annually. The operation is directed jointly by the author and Superintendent of Streets C. E. Foster.

At the landfill site in South Boston, Va., cover material comes down the hill over the toe of the last layer of refuse.

Marinette, Wis.

Marinette, situated on Green Bay in eastern Wisconsin, is one more municipality that has discovered the special usefulness of the area-type sanitary fill in reclaiming wasteland. Here the refuse is placed directly on the ground and a sandy cover material is hauled in to cover each day's accumulation of fill material. City-owned trucks deliver the cover re-



A Packmaster refuse truck delivers a load of refuse to the Marinette fill site.

A tractor packs refuse into the swampy soil at Marinette's fill site. Note that parlor chairs are dumped at the fill along with table scraps.

Fill-and-cover brings the area to a level, useful shape. A topsoil dressing and landscaping will complete the work at the site.

quired for this operation to the site during slack periods.

Marinette compacts the refuse in layers 6 feet deep. A Caterpillar crawler tractor with a Trackson high-lift loader attachment, a tractor operator, and a helper to do all the work at this site.

The project, developed under the general direction of the author and directly supervised by R. T. Brown, successfully handles nearly 100,000 cubic yards annually of refuse contributed by a population of 15,000. One-fourth of the waste comes from municipal collections and three-fourths from private collectors and industry.

Benefits to the city from this operation are manifold. Not only does it afford improved sanitation service, but it gradually reclaims a swamp in the heart of the city. Also, it displaces a festering, open dump and its dangerous and nuisance-creating fires and vermin. Moreover, it supplies the city with a convenient location where industry can expand, and is making possible a site for the high-school athletic field.

Hydroflation for Good Tractor-Tire Performance

ENTHUSIASM for heavier equipment to build better sanitary fills, and the increased compaction that rubber-tired equipment can provide, has been reported. (See THE AMERICAN CITY, December 1953, pp. 88-90.)

However, sanitary-fill authorities have been reluctant to use rubber-tired equipment in fill work for fear of damage to tires. Experience indicates that the damage is not so great as might have been anticipated. Evidently, tires developed for operation on rocky and rugged earth-moving terrain stand up well under the sanitary-fill performance.

The earth-moving fraternity has discovered that it gets better performance from the rubber-tired tractors when the tires are partially filled with a calcium-chloride solution as well as air. The added weight provides the tractor with greater drawbar pull. Tractors with four 21 by 25 tires will weigh almost 3 tons more when the tires are 75% filled with this solution.

LeTourneau-Westinghouse Company, Peoria, Ill., recommends that water loading never exceed 75% of the tire volume, leaving a 25% air cushion. Calcium chloride may be added in proportions of 3 to 5 pounds to every gallon of water. The calcium chloride adds weight and protects against freezing.

Tire loading requires special pumping equipment, available at most agricultural implement dealers or large tire distributors. The tire must be filled while the wheel is jacked off the ground and while the valve stem is at the top and perpendicular to the ground. Filling to the level of the valve in such a position approximates a 75% volume.

Railroads—Municipalities Work Together in New York

THE CONTRIBUTIONS that railroads make to local community growth and development was the subject of an address by David I. Mackie, Chairman, Eastern Railroad Presidents Conference, before a group session of assessors at the annual meeting of the Association of Towns of the State of New York in February.

Mr. Mackie pointed out that although railroads, through their taxes, pay for local police protection just as does any other taxpayer, they maintain mobile, mechanized, radio-equipped forces to protect their own property. In many cases they work closely with local, county, and state police in law-enforcing activities.

Railroads have aided agricultural communities in various ways through a system of railroad agricultural agents. Railroad industrial agents provide a wide variety of services for both industry and communities along the railroad rights-of-way.

Community Relations Program

In New York State, Mr. Mackie reported, a new community relations program was launched last year, through the formation of railroad community committees. One was started in Buffalo, and similar groups are being formed in Rochester and Albany.

"Their work (Mr. Mackie declared) aims at stimulating in railroad people a more active interest in the affairs of their community and, in turn, increasing the interest of the community in the railroads—their prospects and over-all state of health.

"The Buffalo committee — which spread out to include the entire Niagara Frontier area—proved itself of great service to the community in the annual Community Chest drive and other civic activities. We believe that committee will continue to demonstrate its worth in the area it serves. Subcommittees have been organized to seek closer cooperation with business, agricultural and civic organizations.

"We are trying with deeds to prove that railroads are good neighbors. We firmly believe that this 'good neighbor policy' will be of great benefit to the communities we serve. There are many programs for improving service and for helping the communities being carried on by individual railroads all through New York State."

How a Woman Member of a City Council Sees Her Job

By ROSALIND WIENER
Councilwoman
Los Angeles, Calif.

IT WAS WITH HESITATION that I first agreed to write this article for THE AMERICAN CITY for it occurred to me that being a woman member of the City Council really makes no difference at all. Certainly being a woman is no obstacle in the performance of my duties.

When I ran for the City Council, my platform was not designed specifically for women nor slanted toward women. I viewed the job as not one strictly confined to the boundaries of a district, but rather as one of service for the City of Los Angeles as a whole, and it could have been the basis for any campaign. For the problems that face a large and growing metropolis like the City of Los Angeles, with 2,500,000 people and now the third largest city in the United States, are not divided on sex or boundary lines.

Serving 160,000 Constituents

Fortunately, the district I represent, which has 160,000 constituents, does not have any particular characteristics that make it unusual. It is a district composed of people in the middle, upper middle, and higher income brackets. There are no slums, no class distinctions, and no large concentrations of minority groups.

There are the usual requests which come into any Councilmanic office, such as the need for traffic signals, crosswalks, alley improvements, street maintenance and lighting, more schools and playgrounds, and zone variances.

Every effort is made to accommodate my constituents, providing, of course, that the requests are proper and justifiable and are not inimical to the welfare of the district. In such cases, I do view my job as one of service to the people of my district.

Because of my youth, and not so much because I am a woman, I perhaps do approach my job and certain problems with which I am confronted in an unorthodox fashion. Let me cite the following incident as an example.

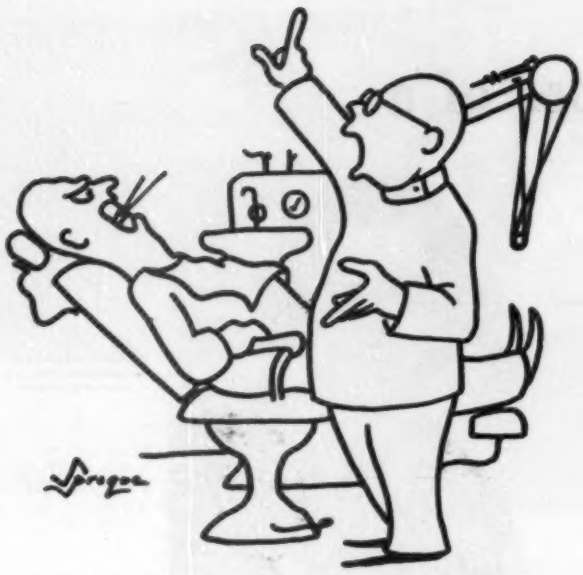
Over the years, the University of California at Los Angeles, as part of its home-coming celebration, has had a home-coming parade. Last year, when the University, which is located in my district, applied for a permit for the parade, the request was denied on the basis that there was nothing in the City Ordinance giving the Police Commission the authority to grant permits for parades.

I was advised that there was nothing which could be done to change the ruling. It appeared that the Police Commission and the Chief of Police were going to be adamant, and it seemed that even a resolution by the City Council would be of no avail. Persistence, or you might say, the combination of womanly and youthful determination prevailed. An exception was made and the permit was granted.

I see my job as one of building—building in the sense of making Los Angeles one of the great cities in the United States, in terms of making it a better place in which to live: in terms of clearing out slums (although, as I stated earlier, there are none in my district); in terms of better housing; in terms of alleviating the smog; in terms of curbing juvenile delinquency; in terms of creating more parks and playgrounds and adequate and proper school facilities; in terms of building healthier and happier committees so that future generations, and my own, may have the opportunity of living, working, and playing in an atmosphere that will lend itself toward the achievement of a nation at peace with itself and will, therefore, lend itself toward the achievement of a peaceful world; for although a City Council can contribute little, if anything, towards the actual formulation of foreign policy, our ability to achieve a peaceful world is dependent upon our own economic and social stability.

I see my job as one of public service to my district and the City of Los Angeles and if I should ever lose sight of this objective, it will be time to get out of public life.

MISS WIENER, graduated from the University of Southern California in 1952, with a degree in Public Administration, was elected to the Los Angeles City Council at the age of 22. Now 23 years old, she is the first woman elected in 36 years to that position. She is the Chairman of the Parks and Recreation Committee and a member of the Personnel and Public Health and Welfare Committees of the City Council.



Dentists are prime exponents of this dental-health measure.

Get Ready For FLUORIDATION

What is involved in satisfying the public's demand for this dental-health measure—whether or not water-works men like it

By W. E. HOOPER
General Manager
Power, Water, and Gas Department
Sheffield, Ala.

I DO NOT KNOW whether fluoridation prevents tooth decay, though I am inclined to think that it does. I do not know if it is a mass medication. If it is, I do not know whether or not this is a proper water-supply function.

However, I do know that when people want fluoridation, fad or no fad, they will have fluoridation. The trend indicates definitely that they do. A recent report of the American Water Works Association showed that, in one year, fluoridation increased from 447 to 769 municipalities; the number of people drinking fluoride-treated water increased from 12,590,000 to 14,300,000.

Dentists and parents seem to be the leading exponents of this dental prophylaxis measure, urging its adoption through civic clubs and parent-teacher associations. In Forest, Miss., the Lions Club was the driving force responsible for the city's acceptance of the treatment by providing $1,000 for the feeder and installation. In Bay Springs, all civic groups joined to demand fluoridation from the city fathers. In another city, the manager of water supply originated it.

Position of AWWA

If you ask the American Water Works Association to state its position, you will be told something like this: "In communities where a strong public demand has developed and the procedure has the full approval of the local medical and dental societies, the local and state health authorities and others responsible for the communal health, water departments, or companies may properly participate in a program of fluoridation of public water supplies."

Virtually all state boards of health have passed similar rules that may be more detailed, but embody this same left-handed spirit of approval.

You may wonder about the legal liability angles. So far as I know, there have been no court decisions to establish this point. However, Michigan's attorney general has offered the opinion that before liability could be established, it would be necessary that the plaintiff show negligence on the part of the utility or municipality furnishing the water and prove that his injuries resulted from such negligence, for example, as in introducing treatment quantities in excess of 1.5 parts per million.

Who pays for fluoridation?

The financial contribution of the Lions Club in Forest is not typical. In almost all other cases in Alabama and Mississippi, the city water department absorbs the cost. However, in Bay Springs, the cost is borne by the health and sanitation funds.

How much fluoride should be added?

Mississippi prescribes a fluoride content of 1 ppm to 1.2 ppm in the treated water; and Alabama prescribes 1 ppm in the winter and 0.7 ppm in the summer. The reason for different amounts in winter and summer is that a person drinks more water in the summer.

A fluoride content of 1 ppm will require about 14 pounds of sodium silicofluoride. At the current price of 8.5 cents per pound, this means that the chemicals will cost $1.19 per million gallons. Some raw waters contain fluoride and this content should be taken into account in the dosage, which, of course, will be reflected in the cost. For example, if the raw water has 0.3 ppm fluoride, then only 0.7 ppm needs to be added to give a total fluoride content of 1 ppm.

Which fluoride compound should be used?

You can choose between sodium fluoride, sodium silicofluoride, hydrofluosilicic acid, and, perhaps, others. Unless your plant is rather small, you will probably decide on sodium silicofluoride, which is cheaper than the others. For a given dosage, sodium fluoride will cost two and one-

---

EDITORIAL NOTE: This article has been prepared, approved, and published jointly by the American Public Health Association, and the American Water Works Association. Publication office is at the American Public Health Association, 1790 Broadway, New York 19, N. Y.

half times as much and hydrofluosilicic acid will cost twice as much.

How should fluorides be fed?

You will find that the feeders are similar to those used with other chemicals. However, when you realize that for a million gallons of water you feed only 14 pounds of sodium silicofluoride, or about 1½ gallons of hydrofluosilicic acid, you can see that you may have some practical difficulties on your hands. In some cases, it seems that a shovel is being used where a teaspoon would be more accurate. There is a definite need for better feeders.

You may use gravimetric or volumetric dry feeders, or positive displacement pumps for feeding a solution of the chemicals. The smaller plants may choose the latter because of lower initial cost and reliability of operation.

How much should feeder cost?

The cost of the feeder ranges from $323 for a simple solution feeder to around $3,500 for more expensive gravimetric dry-type feeder with recorder, alarm system, and other refinements. The cost of installation varies according to plant arrangements, but should not be a large percentage of the machine cost.

Where should fluorides be applied?

It seems preferable to feed the chemical after filtration, since some loss may occur in passing through the settling basin and, perhaps, through the filters. This may not be feasible, as it is at Tuscaloosa where the fluoride is introduced under pressure into the raw water. At Columbus, Forest, and Sheffield, it is fed by gravity at a point between the filter and clear well. At Meridian, it is fed by gravity into the high-lift pump suction. Two wells provide water for Bay Springs where the only addition is sodium fluoride, fed by a solution pump at each well into the discharge of the high-lift pump.

An exception to the rule is in the plants with water-softening equipment. Here the fluoride should be fed after the softening process is complete because the chemicals used tend to precipitate the fluoride with resultant loss.

How should operators be protected?

According to R. W. Ockershausen of the General Chemical Division of Allied Chemical and Dye Corporation, producers of fluorides, the chemicals are toxic and should be handled with care. This has been overstressed in some cases to where the operators actually are frightened every time a bag of fluoride must be handled; in other cases, small plants have been saddled with costly equipment that hardly seems justified. The fluoride salts will not burn the skin, but prolonged contact, particularly in warm weather when operators are perspiring, should be avoided to prevent skin irritations.

The fluorides should be washed off the hands and arms after handling. Good housekeeping and commonsense safety precautions will eliminate fluoride handling problems. It is felt that dust collectors on the feeders are an unnecessary expense where less than a bag of fluoride is handled in a day, but collectors are desirable where many bags are emptied at any one time. In the plants where fluorides are manufactured, strict attention is given to dust prevention. Workers, particularly those packaging the chemicals handle tons per day, and are in more or less daylong contact with the chemicals. They wear gloves and respirators and have experienced no health problems.

How should the fluoride concentration be measured?

The color comparison method is fairly simple but some operators are justifiably not confident of the results when the color developed in their water does not match the standard color. There is definite room for improvement in this phase of the treatment process.

The tests for measurement are a matter of following established procedures using color comparisons. Both Alabama and Mississippi prescribe as an official guide, *Standard Methods for the Examination of Water and Sewage*. In Alabama, the use of color discs is permitted for control adjustments only. This state also provides: that tests must be made at least daily on raw, plant, tap, and distribution-system waters, while Mississippi provides that samples shall be collected daily from the plant effluent and once a week from the distribution system.

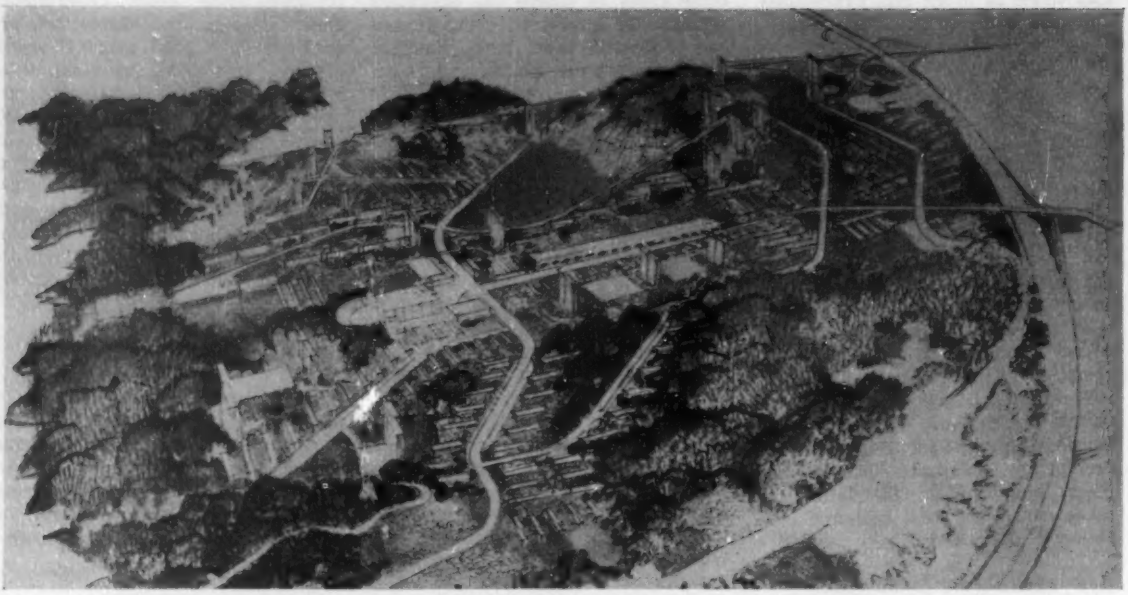
Relations with the Public

When you have worked out all of your problems of authorization, law, design, installation, testing, finance, and public relations and are ready to put your plant into operation, there arises the question of the announcement to your real bosses—the public.

In some communities the public announcement of actual fluoridation has been delayed until some time after they have started the treatment. Other cities have announced it and delayed starting the treatment. Such procedures, it is claimed, have helped answer the "crank complainer" that the water has made the consumer sick, that the water tastes bad, or is causing other trouble.

This may be a little unfair to your tax-paying complainers, but it may save time for something more interesting, such as: why Mrs. Jones' bill was so high when she has been out of town for three weeks; or why your meter readers don't read the meters.

The amount of fluoride to be added to water varies, and is often dependent upon the fluoride content of the raw water.



RICHARD J. NEUTRA AND ROBERT E. ALEXANDER, ARCHITECTS AND PLANNING CONSULTANTS

ELYSIAN PARK HEIGHTS, LOS ANGELES, CALIF.—a community, well placed on its site, and its requirements well filled, a harmonious production that yields psychological satisfaction.

"Practical" Cities Must Not Be Full of Irritations

Suggestion to Mayors, City Managers, and Other City Officials

By RICHARD NEUTRA
of Richard J. Neutra and Robert E. Alexander
Architects and Planning Consultants
Los Angeles, Calif.

AMERICA is proverbially the country of industrial, technological know-how. Mayors, city managers, and other city officials must, of course, share in this know-how and will read with profit the informative articles on so many subjects of utility that month after month THE AMERICAN CITY lays before them. Utility and economy are stressed, but sometimes also the beauty of an electrolier or the landscaped setting of a playground.

My suggestion is that nature is man's precedent from which he has learned over tens of thousands of years, and especially during these last generations. We really know now something about nature—much more than the ancients and our forefathers. The progress of our technique in excavating, tunneling, and constructing outfall sewers may be great and presupposes a knowledge of the laws of nature. Yet it is not as stupendous as our recent progress in all branches of physiology and our understanding of what makes man tick and what stops his ticking.

The increase, for example, in cardiac diseases and collapses has been explained by nervous strain. The brain physiologist observes this strain under the term of "arhythmic innervation." He has minutely tabulated laboratory proofs of the damage and disaster that the daily stimuli of urban life hold in store for us.

But let it be simply called nervous strain and realized that this is our urban life generally—not only the life of our big cities—produces undue strain, and that we do little about it for the practical reason that bond-issues threaten to fail, even if more "practical" projects are involved.

Yes, our reasons must be practical. But there is nothing more practical than life itself, I maintain. There is nothing more impractical and costly than impaired health; and nervous disorders are the most insidious and camouflaged health hazards—at least until the sufferer is spotted, properly insulated, and institutionalized.

Perhaps there are many reasons why eight or nine million Americans cool their too hot heels in psychiatric waiting rooms annually. But the city of today bears its share of blame—thronging, as it does, with traffic jams and the recklessly inorganic color schemes of neon lights, with wires crisscrossing through the smog where once was the blue sky that attracted comers from all parts. (I am writing this in Los Angeles.)

Do I speak of "beauty"?* No, this is much too vague a topic to discuss.

Once man was credited with five senses. Modern physiology has been busy discovering new senses in re-

---

* SURVIVAL THROUGH DESIGN, by Richard Neutra. Oxford University Press, New York, N. Y., 1954. Just published, this book discusses the fallacy of "Beauty versus Utility" in practical terms. (See page 173 of this issue.)

cent decades; but a "sense of beauty" has never been discovered. It is a figure of speech.

Our nature is whole and not split; there are no "departments." And the same holds true for our precedent nature around us. It would be hard to say where a tree stops being "utilitarian," "functional," "operative," and where it starts to be beautiful. The mere question is nonsense from a scientific point of view.

Beauty Versus Utility

If we try to weigh Beauty versus Utility, or vice versa, we weigh imponderables. And, if we contrast these two abstract ideas, we simply stay precariously away from realism and from what there is in natural reality.

A special art commission—incidentally with practically no budget—will mean little to the other departments of municipal management which have to deliver very tangible, prescribed goods. They are by their charter obligated to do so; they are not authorized by any intelligible legal clause to waste taxpayers' money on any long-hair ideas. Above all, they have no one on the payroll qualified to suggest or carry out such ideas with any possible promise for convincing returns.

If there is a harbor commission in a seaport town, it is charged with providing facilities for shipping that are commercially needed, bringing up yearly gross tonnage, keeping the longshoremen happy enough not to wreck business and to perform cargo-to-freight and freight-to-cargo commutation successfully.

If anyone would demand of them to pause and see a harbor as the gateway of a city or a country and spend money on its "beautification," some "practical" commissioners and the port managers might gasp. It's not the business they are trained for.

If a city has municipal power and water, its motive is obviously to furnish current and water at a reasonable rate. The department will have a staff of engineers to design transmission lines and water reservoirs. Cannot such a department permit itself to make the power poles less "ugly," or see in transformer cans hanging in front of bedroom- or livingroom windows something else than a good practical item?

An open large water-body in a dense city is a priceless treasure of free space over a million dollar mirror, reflecting clouds and hills and trees. Thousands of commuters would love to refresh themselves a moment by this vista. Each American automobile on that lake road is designed for a large fee by swanky industrial designers, but the water department has no legitimate budget item for esthetics. If this reservoir is only a plumbing fixture right in the heart of the city or in a residential district, a small fraction of compensation is paid for design talent invested, compared with what our plumbing-fixture manufacturers pay for one bathroom lavatory plus fittings.

If there is such a dualism and duplicity of "utility" and "beauty," beauty surely comes out second best, and no art commission will help it much. But to raise children in psychologically satisfactory surroundings and not have them warped by sensorial privation, by confusion and irritation to the eye or the ear or the nose, to have them look out on a green surface, or into green foliage, or play in the shade of trees—instead of our spending the money on well-advertised aluminum blinds, or awnings, or shades after cutting down the trees—all this is quite practical.

Biological Realism

Man has been conditioned and moulded by nature for a million years, and city administrations have the job to administer biologically bearable conditions to the citizens, young and old. This is an extremely practical consideration. I call it Biological Realism. It is reasonable to profit from all current scientific information:

First, we must agree and educate ourselves to admit that there is nothing more practical than wholesome life. Our intake must be reasonably screened. Drug and Food Acts protect us only against dangers in what we swallow. But stimuli filter into us through many channels, through all the senses.

Second, we must not just sidestep the issue and leave it to a powerless art commission and let "George" do it who is only superficially informed about the facts of life.

Third, each municipal department can and will gain greater citizen support for the manifestations of its activity if they are convincing and pleasing to the senses and nerves. Effective public relations are often better furthered this way than by a supreme — but mere — technical performance, unfortunately understandable to a few experts only. The out-of-town national and cosmopolitan prestige that can be gained will benefit a city, like for example, the recently completed magnificent aqueduct terminals in Manila and Mexico City —municipalities much less wealthy per capita than cities in our country.

Fourth, we must, in agreement with the mayor, prepare for a detailed talk with the city attorney and see how the legal obligations, authorizations, and qualifications of all city departments can and must be revised in order to hold water in the eye of the jurist, the educated voter, and the enlightened taxpayer. The revision will include psychological satisfaction as a goal and not leave it starved as a fully forgotten stepchild. Presentation of the issue for municipal legislation must be clear.

A Long But Worth-While Struggle

It is a long and uphill struggle in the midst of old-fashioned, grimy, nineteenth-century mentality. Modern science has recognized many vital needs beyond the grasp of that mechanical brand of materialism. Los Angeles Beautiful, under the presidency of Valley Knudsen, is taking the lead in this struggle, and the initiative alone to tackle the problem with all circumspection will be a feather in the cap of the mayor and the manager or director of practically every department of the city. Public relations and community support are always needed and bound up with soul-satisfaction of the voters.

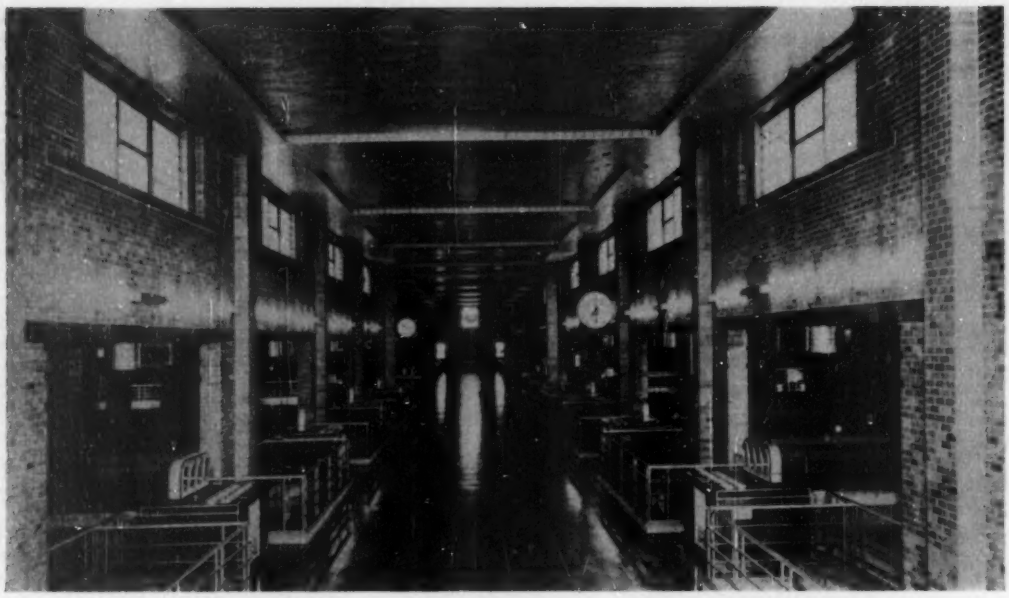
Los Angeles Beautiful Provides Clearing House For Community Projects

LOS ANGELES BEAUTIFUL is the name of a five-year-old citizens' organization which has as its slogan: "Greater Pride — Greater Los Angeles."

The organization serves as a clearing house and workshop for all interested in making Los Angeles a more beautiful anod gracious place in which to live and work. Among the projects proposed and developed since the organization's inception, and with which it has cooperated, have been the following:

Parkway tree planting, improvement of freeway landscaping, improved appearance of business and industrial areas, elimination of hazardous billboards from freeways, plan for adequate rubbish disposal units, organization of "Know Your City Week," city birthday celebration, educational exhibits at California International Flower Show, etc.

The Women's Division of the Los Angeles Chamber of Commerce serves as Secretariat, at 1151 S. Broadway, Los Angeles 15, Calif.

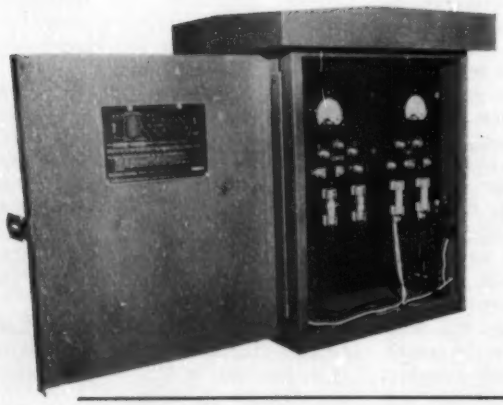


The filter gallery has an imposing appearance in Toledo's big plant.

The Toledo Story of Corrosion Prevention

Cathodic protection corrects corrosion problems in the water-filtration plant

By GEORGE J. VAN DORP
Commisioner of Water
Toledo, Ohio



A close-up of the rectifier and control system.

THE Toledo Water Department serves a metropolitan area inhabited by 365,000 people who use an average of 60 mgd (million gallons daily) of water. In processing and treating these large quantities of water, many problems present themselves which, in their existence and intensity, are caused directly by certain characteristics in the water supply to be treated. Tuberculation and corrosion of surface-wash equipment in the filter beds at the new Collins Park Filtration Plant made it apparent, soon after the plant was put into operation early in 1942, that Toledo's water had caused such a problem.

Prior to that time, the source of water supply for Toledo was the Maumee River, taken at a point about 7 miles from its mouth, or Maumee Bay, where the river flows into Lake Erie. However, because of the impure condition of the water and the short supply at that point, the new Lake Erie water-supply system was constructed and placed in operation.

While the new supply taken from Lake Erie at an intake located about 3 miles offshore was of a much improved nature, it was soon evident that the problem of corrosion and tuberculation had become much greater than that which existed in the old plant. The deterioration became especially noticeable on steel piping within the filtration plant and the filter surface-wash equipment that is normally submerged in the filter basins.

To prevent rapid deterioration of

the steel piping and headers constituting the filter-wash equipment, the usual method of thorough cleaning and application of various types of high-grade anticorrosion paints was attempted. This method provided limited protection and improvement of the condition, but necessitated repeated operation at four-year intervals.

The noticeable progressive deterioration of the metal surfaces further gave warning that, within a few years, costly replacements would be necessary. This, together with the high cost of maintenance and the loss of plant capacity because of the outage during repair periods, prompted our investigation of other possible methods for protecting the equipment.

Cathodic Protection Proposed

After careful investigation and consultation with corrosion engineers, it was decided to explore the possible benefits that might exist in the application of cathodic protection. We, therefore, designed and installed an experimental installation in one of the 20 double filter beds which comprise the 80-mgd plant.

For the purpose of obtaining direct and comparable data and visual observation of results, two adjacent filter compartments were identically prepared. All rust and tuberculation was scraped from the steel equipment in the filter bed, and the experimental cathodic equipment was then installed in one filter compartment. The other unit was left unequipped to serve as a control. The installation was completed in January 1951. Both filter beds were operated for a trial period of two years.

Within six months, a very definite difference was noticeable on the metallic surfaces. After 18 months of application, the results indicated, beyond any doubt, that very satisfactory results were being obtained. There was no evidence of corrosion of the equipment in the cathodically protected bed. In the adjoining unprotected filter chamber, the usual rate of progressive corrosion and tuberculation was present.

On the basis of these results, plans and specifications were prepared and competitive proposals were received for the installation of cathodic protection on all the surface-wash equipment in the filtration plant. Installation of cathodic protection in all filter beds was completed in June 1953, at a cost which was less than the expenditure for a single cleaning and painting of the equipment. The results thus far are gratifying in that they indicate that corrosion has been completely controlled.

Pipe-to-Water Potential

Pipe-to-water potentials measured with a "copper-copper sulfate" reference electrode placed immediately adjacent to the pipe in Filter No. 1 now meet two of the accepted criteria of protection, as follows:

1. Change in pipe-to-water potential of —.3 volts
2. Pipe-to-water potential of —.85 volts.

Pipe-to-water potentials measured before the application of cathodic protection range from —.48 volts to —.55 volts. Similar readings were obtained throughout the surface-wash pipe in the twenty basins.

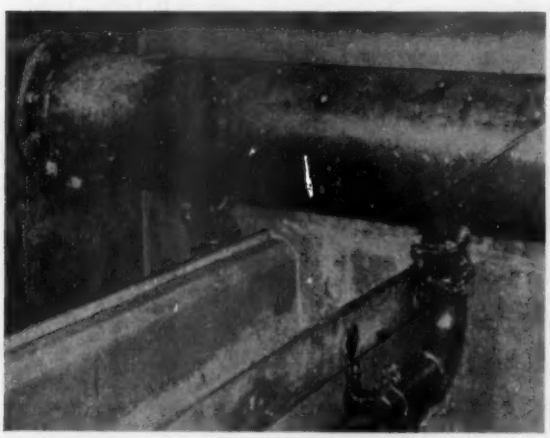
Filter No. 1 (location)	*PW/P (in volts)*
1	—0.93
2	—0.01
3	—0.95
4	—1.10
5	—1.06
6	—1.09
7	—1.09
8	—1.09
9	—1.04
10	—0.95
11	—1.03
12	—1.05
13	—1.13
14	—1.05
15	—1.07
16	—1.03
17	—1.06
18	—0.95
1A (front of header)	—1.08
11A (front of header)	—1.14

In addition to cathodic protection for the plant, Toledo provided cathodic protection for a 16-inch, steel, water main. The main was installed in a marshy area and developed many leaks because of corrosion within a few years after its installation. For this protection, the use of magnesium anodes was adopted.

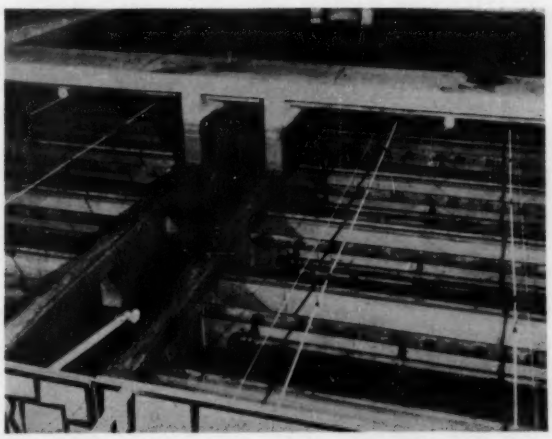
Since the installation of the protective equipment, the customary leaks, which developed at the rate of about eight per year, have been reduced to only two small leaks during the past three years.

Cathodic protection, of the sacrificial anode type, similar to that used on the filters, was applied to the 1,000,000-gallon, elevated, wash-water tank in 1950. It has given excellent protection to the interior metal surfaces of the unit. Recent examination shows excellent plating below the water line with no apparent surface treatment required.

All installations of cathodic protection were engineered and installed by contract by the Electro Rust-Proofing Corporation of Belleville, N. J. Periodic inspections, adjustments, and maintenance of all installations are made by the field staff of the company under a yearly, renewable-service contract.



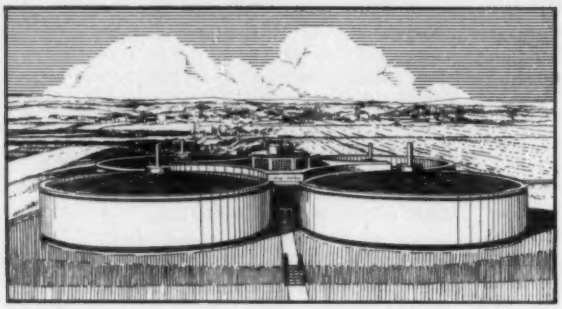
Before the installation of cathodic protection for the filter equipment, pipe quickly became deteriorated with corrosion.



Sacrificial anodes hang suspended above the filters to protect the metal surfaces of equipment serving the filters.

New developments in "controlled digestion"

A STATEMENT OF POLICY



In the development of controls for the separate sludge digestion process, the Pacific Flush Tank Company has been a leading contributor. The P.F.T. Floating Cover was developed to provide means for positive submergence of the scum in the seeding liquor and allow safe gas utilization. P.F.T.'s development of external heating of recirculated digester contents and raw sludge assures the maintenance of constant optimum digester temperatures. And more recently the development of the P.F.T.-Pearth Gas Recirculation System provides a positive means for the rapid dispersion and elimination of scum accumulations.

Our Policy is Clear—With our many contributions to the basic knowledge of the sludge digestion process, it has always been our policy to point out the advantages of closely controlling all factors affecting digestion. With effective controls, operational difficulties are eliminated and successful digestion results—the production of an inoffensive sludge of uniform concentration suitable for ultimate disposal.

We will continue to advocate the use of established design criteria for digestion capacity as formulated by consulting engineers and State Boards of Health. We feel that these criteria are developed to take into consideration practical plant operating procedures and future requirements. These criteria cannot be based solely upon results of pilot plant studies which require careful control by staffs of highly skilled technicians.

The introduction of the P.F.T.-Pearth Gas Recirculating System provides an economical means of dispersing scum accumulations, making the total digester volume available for effective digestion. There is no *mysterious* action in the operation of any gas recirculating system. It is merely a *mechanical* action which aids the normal biological activity by breaking up the scum so that it can be digested.

To those interested in sewage and waste treatment, Pacific Flush Tank Company will continue to offer straight-forward information about all of its equipment and new developments.

P.F.T.

waste treatment equipment exclusively since 1893

PACIFIC FLUSH TANK CO.
4241 Ravenswood Avenue
Chicago 13, Illinois

NEW YORK • LOS ANGELES • SAN FRANCISCO • CHARLOTTE, N. C. • JACKSONVILLE • DENVER

Preference to

Local Bidders—*When and Why*

By **WILLIAM J. BURKE**
Purchasing Agent
Corpus Christi, Texas

IN TIMES of good business, easy sales, with the demand running ahead of the supply, city purchasing agents aren't pressured to buy locally. In good times some salesmen actually avoid the purchasing officer. When business begins to slow down and supply begins to exceed demand, when salesmen really need to sell, we feel pressures from many directions.

Who exerts these pressures on the purchasing officer? Usually, large taxpayers; large utility users; firms that have done business with the city for many years; firms who base claims on past favors, made to and for the city; firms whose claims are based on past performance, and personal influence exerted on the city purchasing agent by city officials.

These local business men who claim preference because of past favors to the city have been paid for the merchandise delivered and for the service rendered. Delivery has been made and payment received by them.

Prescribed Purchasing Rules Vary Amongst Municipalities

Each of us represents a different governmental agency. There is variation between counties and states. The limitations or conditions under which our city operates are not likely to be the same in our neighbor city. There is no standard or uniform set of laws applicable to all municipalities in all states.

We must, therefore, excuse our vendors if they seem confused as to the correct point of contact when attempting to sell governmental agencies. But I believe that any vendor wishing to do business with any agency of government can find the proper channels. We say he should instruct his salesmen to ascertain and follow the prescribed purchasing channels.

Many salesmen try to contact a number of city officials. As a result, some requests or requisitions from using departments come to the purchasing department calling for brand names. If the purchasing agent accepts these requisitions without question, he is merely rubber stamping some person's encroachment upon the functions and duties of the city purchasing agent.

What are we city purchasing agents? Are we a part of management? Are we consulted and/or invited to planning sessions. Are we classed as auxiliary officers? Commercial organizations classify their purchasing officers as part of management. In government, the public purchasing officer is likely to find himself in the auxiliary group. That is why he is often vulnerable to pressures.

The Charter of the City of Corpus Christi is now being studied for the purpose of making revisions. I was privileged to make certain recommendations which I believe will be adopted.

City purchasing agents should periodically re-examine their organizations and methods. We help build up pressures for preference when we depend on, use, or allow local conditions to unduly influence our buying habits or the preparation of specifications; also, when we collaborate with a single vendor and fail to establish competition. Limited independent research narrows specifications. This means trouble. Our employees, because of their limited knowledge, may develop the tendency and habit of calling the supplier they know can most readily and quickly be depended on to furnish information. Continued use of this practice also creates pressure. Occasionally, we impose on our vendors unduly at inopportune times. This creates a just claim of preference and should be recognized. When buying habits tend to become fixed, we must open them up and spread out our contacts. Without constant surveillance they will shrink.

For brevity, I have classified employee purchasing habits as follows:

Lazy
Pumper
High spotter
Trusting soul
Office competitor

No doubt you have your own interpretation of such terms.

Preference should be earned. Sound purchasing must recognize these basic factors: *Price, Service, Quality, Delivery, Miscellaneous — financial plans,* etc.

With these criteria, we can successfully handle the pressure of preference from local or out-of-town bidders. We will find ourselves reacting to basic requirements and following sound purchasing procedure in our everyday practice.

Mr. Paul Clovis, president and director of the Twentieth Century Press, of Chicago, Ill., in an address to the 34th Annual International Convention of Printing House Craftsmen, said, "Let us remember, and sell the thought to our neighbors, that the Government actually cannot give something for nothing—for it has nothing—except our money and our future earning capacity, as American citizens.

"Let us point out that it is folly to attempt to obtain special advantage at the expense of Government—for Government is us, down to the last taxpayer. Let us realize that things cannot always be done as directly in Government as they are in business, or as promptly. Let us recognize that harmful effects to our economy, or our method of operating as a Government, accumulated over a long period of years. Let us first make sure that the public servants, whom we have elected, are sincere, honest, hard working men, who are trying to do a good job. If they are, let us remember that they will need our patience and our encouragement and our confidence, as well as our constructive, helpful suggestions."

I believe in preference to local bidders *when it can be definitely established, by comparison of all bids or offers received, that such preference is earned and justified.* Regardless of the name of the firm or its location, *the bid or proposal recommended must stand on its own legs.*

Another famous American thorofare with

Millerbernd

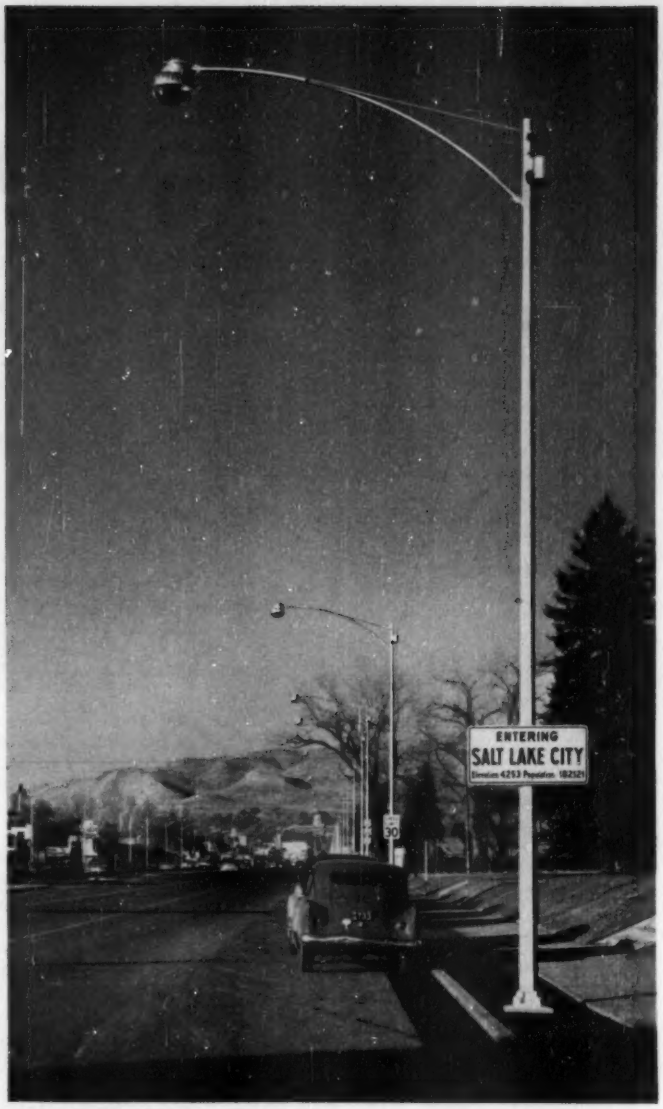
Octa-Tube

LIGHTING STANDARDS

STATE STREET, in Salt Lake City, one of America's most impressive thorofares, approaches the Utah State Capitol . . . set against a backdrop of rugged mountains.

For this handsome, well-planned arterial, Salt Lake City chose Millerbernd Octa-Tube lighting standards.

Important considerations in this choice were extra rigidity and long life. Millerbernd Octa-Tubes qualified highly on both counts . . . because they are cold-roll-formed of corrosion-resistant, *extra-strength* steel.



120 Octa-Tube standards were used in this installation. The luminaires are General Electric Form 109, mounted on 12'-0" arms, 31'-6" above the pavement.

What can modern lighting do for your city?
This new free booklet will answer many of your questions . . . how business benefits, how public safety is increased . . . how you can do the job at low cost. Write for Bulletin OTA.

Millerbernd

MANUFACTURING CO.
WINSTED, MINNESOTA

Cities Make Good Redevelopment Progress

REDEVELOPMENT of 52 slum areas in 32 cities for which federal loans and grants had been approved as of the first of this year is expected to result in a construction outlay estimated at almost $500,000,000, Administrator Albert M. Cole of the Housing and Home Finance Agency reported on February 27. These 52 areas constitute about one-third of the 154 slum areas that are in or near the actual development stage of local slum clearance and urban-redevelopment programs.

A breakdown of the estimated $497,000,000 outlay by type of construction shows:

$271,300,000 for housing ($257,700,000 for private housing; $13,600,000 for public housing)
53,500,000 for commercial construction
48,000,000 for industrial construction
107,700,000 for public and semipublic construction ($796,100,000 in the project areas. $28,600,000 for supporting facilities outside the areas)
16,700,000 for site improvements.

The approved applications permit the local public agencies to commence land acquisition and clearance with the assurance of federal assistance for financing interim expenditures and for meeting a part of the net costs. Seven additional projects are financing initial project-development activities with local funds until loan and grant applications are completed and approved.

Redevelopment of assembled and cleared land had commenced in nine project areas in seven cities. In projects in Baltimore, Chicago, Little Rock, Norfolk, and Philadelphia, redevelopment has progressed to the point that tenants have already moved into newly constructed or rehabilitated dwellings made possible by the local slum-clearance programs.

By the end of 1953 there were 32 slum areas in 25 cities in which demolition was under way, 28 other projects in 21 cities for which land acquisition and clearance have been approved; 94 others in 79 cities in which final plans are now being prepared.*

In all, 154 projects in 108 localities are well advanced compared to 99 projects in 70 cities a year ago. Approvals for preliminary planning and survey activities aimed at identifying the initial local project were in effect for an additional 71 localities. Thus, planning advances or loan-and-grant contracts had been approved for slum-clearance projects in 179 localities.

Some 45 other cities were holding capital-grant reservations as an indication of their intention to initiate a local Title I program. This makes a total of 224 localities where work on one or more Title I projects is either under way or contemplated. Two-thirds of these localities have populations of under 100,000.

Capital-grant reservations for the participating localities now total $246,000,000, or approximately one-half of the $500,000,000 authorized by the Act.

Almost 6,000 structures have been demolished in the 32 areas in which demolition had begun. At the same time, about 15,000 families have been relocated from 40 of the 60 project areas in the development stage.

During the last half of 1953 federal assistance was approved only after the HHFA was satisfied that the applicant was enforcing its codes or regulations as to health, safety, and sanitation and on a showing that rehabilitation was not feasible in the project area covered by the application. This was in accordance with provisions of the Independent Appropriations Act of 1954.

Types of Areas Being Cleared

While four types of slum or blighted areas can qualify for assistance under Title I, local public agencies are directing almost all of their efforts toward eliminating slums in or near central areas of their cities.

Ninety per cent of the 154 projects now well advanced are residential slums and blighted areas. The remaining 10% consist of seven other built-up blighted areas, and nine predominantly open-land areas which, in most cases, are undeveloped subdivisions that have become blighted. Although loans but not grants may be made under Title I for projects consisting entirely of open land, no project of this type has reached an advanced stage.

The 154 project areas embrace a total of about 5,700 acres, with the individual project areas ranging in size from 2 to 325 acres. A majority contain less than 25 acres.

Types of Redevelopment Being Planned

Housing will be the principal reuse in 84 projects, or more than half of the total, according to plans of the local public agencies. Some residential reuse is also planned in 11 additional project areas in which other uses will predominate. Data from local public agencies covering 85 of the 95 projects indicate that 51,000 new dwellings could be built on the land designated for residential reuse under proposed density standards.

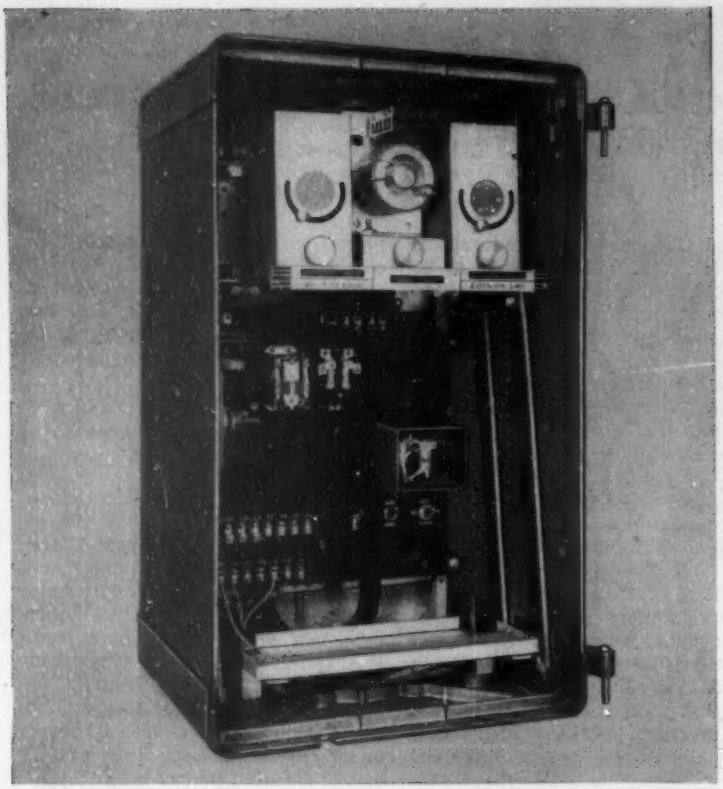
It is expected that at least 93% of the new housing units will be built by private redevelopers, with about five rental units contemplated for every two sales units. Public housing will be the predominant use in only two projects but some public housing is planned in a subordinate role in eight other projects.

The redevelopment proposals recognize that all or portions of some of the project areas are more suitable for commercial, industrial, or public uses than for residential redevelopment; thus, nonresidential uses will be predominant, or exclusive, in 70 project areas. Such areas, however, to qualify for federal aid, must have been slum or blighted areas predominantly residential in character prior to clearance.

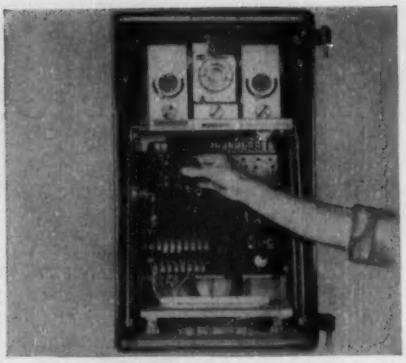
Industrial development will be the predominant or exclusive reuse in 29 areas, commercial in 27 areas, and nonresidential public reuse in 14 areas. In most of the project areas in which housing will predominate, there will also be some nonresidential uses, typically neighborhood shopping centers and public facilities such as playgrounds, clinics, and schools. Some of the larger residential projects are also expected to provide land for redevelopment for warehouse and light industrial areas.

The estimated federal capital-grant requirements for the 154 delineated projects aggregate $196,000,000. Local grants-in-aid in the form of cash, do-

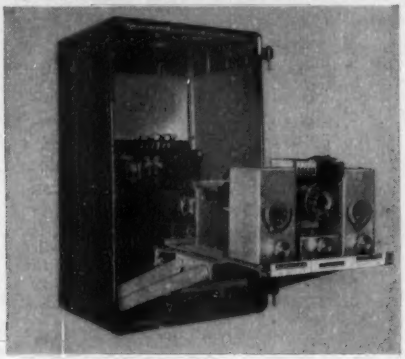
* Some cities have one or more projects in the various stages of development or planning. Therefore, the number of cities in which programs are well advanced is not the sum total of the number of cities mentioned for each of the above three categories.



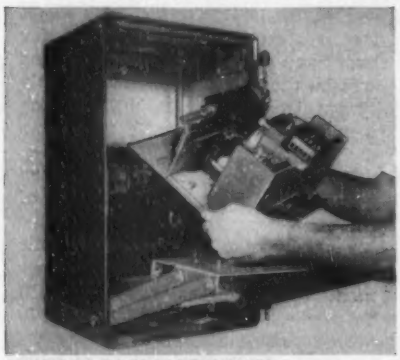
EASY TO SEE components like dial unit, timing knobs, as in Type F, make servicing easy.



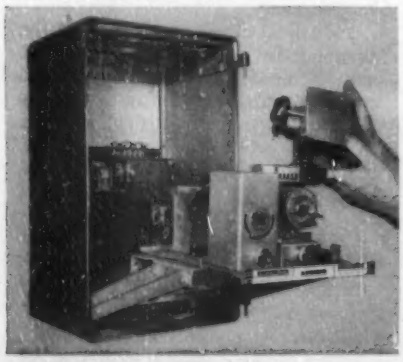
JACK-MOUNTED RELAYS make field servicing take less time—saves man-hours and labor costs.



TIMER SWINGS OUT on pantograph arms, for easy inspection and maintenance in the field.



TIMER IS EASILY REMOVED for fast servicing by just twisting two half-turn fasteners, unplugging Jones plug, and lifting.



SIMPLE FIELD OPERATION is assured with jack-mounting and unitized construction. Here extension limit relay has been unplugged.

G-E TYPE W CONTROLLER OFFERS

semi-vehicle actuation with the simplicity of the famous Type F

SIMPLICITY of jack-mounting and unitized construction pioneered in the famous G-E Type F traffic controller, has been incorporated into G.E.'s new semi-vehicle-actuated controller—the Type W. This electro-mechanical controller uses basic parts, such as the timing dial units and signal drum assembly, which are mechanically identical to those of the famous Type F Controller.

IDEAL FOR INTERSECTIONS where signalization is required to enable motorists to cross or gain access to the main thoroughfare, the Type W is also available in fully-actuated models.

MORE INFORMATION is available at your nearest G-E Apparatus Sales Office or Traffic Control Distributor. Or write for Bulletin GEC-941, to Section 453-60, General Electric Company, Schenectady 5, N. Y.

453-60

You can put your confidence in—

GENERAL ELECTRIC

nations of land, site improvement, and clearance work, and supporting facilities will be provided by the localities at a cost of $110,000,000 to make up the balance of the over-all net project costs, or deficits, aggregating $306,000,000.

This deficit, amounting to about two-thirds of the gross costs of the projects, reflects the high cost of assembling slum property, clearing the land, and providing the streets, utilities and other improvements which are necessary in order to dispose of the land for redevelopment — costs which, prior to the enactment of Title I, had prevented private enterprise from rebuilding these worn-out sections of communities.

Cities which had projects approved for development and for final planning as of December 31, 1953, are listed in the accompanying table.

ALABAMA
Birmingham
Montgomery
ARKANSAS
*Little Rock
CALIFORNIA
San Francisco (2)
DISTRICT OF COLUMBIA
Washington
ILLINOIS
*Cairo
*Chicago (2)
MARYLAND
*Baltimore (2)
MICHIGAN
*Detroit
MINNESOTA
St. Paul (2)
MISSOURI
Kansas City
NEW JERSEY
*Jersey City (2)
Newark (2)
Perth Amboy (2)
NEW YORK
*New York (7)
Port Chester
OHIO
Cincinnati
PENNSYLVANIA
*Philadelphia (3)
RHODE ISLAND
Providence (2)
TENNESSEE
*Murfreesboro
*Nashville
Bristol
VIRGINIA
*Norfolk
PUERTO RICO
*Aibonito
*Anasco
*Arecibo
Arroyo
*Bayamon (3)
*Cabo Rojo
*Caguas
*Carolina
*Mayaguez (2)
*Naguabo
*Ponce (3)
*Rio Piedras
*Sabana Grande
*San Juan
*Vega Baja
HAWAII
Honolulu

An asterisk (*) indicates that some demolition has started. Figures in parentheses indicate the number of projects approved, if more than one.

Chicago Park District Features Music Programs

Music Director Dr. W. S. Young leads the community orchestra at Fuller Park.

MUSIC ACTIVITIES are being increasingly featured in the recreation program of the 107 parks operated by Chicago's Park District, reports Dr. William Francis Bergmann, the District's supervisor of music.

Already the park district has four thriving symphonies, drawing their young musicians from all over the city. Dr. Bermann hopes to expand this number, and also to get many more instrumental and vocal groups organized. Among these are harmonica groups, accordion bands, dance bands, and ukulele groups.

The park district employs trained directors to organize and direct the music programs and each of the musicians provides his own instrument. The instructors are drawn from schools and music academies all over the city.

Citizens to Have Say in Tree Removals

MERCED, CALIF., has a new ordinance that gives residents a chance to plead for the lives of trees slated for removal from public lands.

The city puts notices on condemned trees, according to the American Municipal Association. And owners of neighboring property are told that the trees have been marked for removal. Then the Recreation and Parks Commission and City Council hold hearings at which citizens may raise objections.

Provision is made for an annual tree-removal sale which will state which trees are to be condemned and will set forth the reasons that removal is desirable.

What Downtown's Got That Suburban Centers Haven't

THE POWER and magnetism of the central business district of almost any city remains so superior to suburban shopping centers that these major bazaars are worth fighting for. The department stores alone put suburbia out of the running. They are supreme in variety of goods, styles, sizes and colors, prices and deliveries. An extensive study by the Boston (Mass.) *Herald Traveler* reaffirms the facts.

This recent study blew another hole in the theory that lack of parking facilities in the heart of the business district is a major factor in the decay of these districts and that, conversely, immense parking facilities must be provided to service the influx of shoppers in cars. In Boston, only 22% of the shoppers come in cars and only 7% complained of lack of parking facilities.

On the other hand, it may well be that the provision of parking facilities is the making of large suburban shopping centers. For the resident population is insufficient to support them. If there are big crowds, they come by automobile, and they come chiefly for stock items, brand names, electric appliances, and children's wear. In fact, "children" was given as the reason by 40% of the women who don't come to downtown Boston as frequently as they used to.

Can't

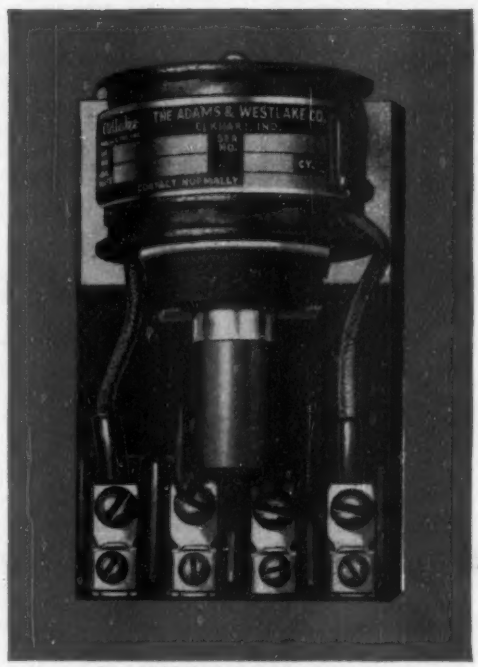
is a word
ADLAKE engineers don't understand!

Often, a problem that "can't be solved" is merely one which hasn't yet been brought to the right people. When such problems come in to ADLAKE relay engineers...problems requiring special relays for unusual installations...they promptly drop the "can't". For, if there is no ADLAKE Relay to answer a specific need, one will be designed and manufactured to fill it.

ADLAKE Mercury Relays have proved their ability to stand up under the most adverse conditions of temperature and moisture. Their time delay characteristics are fixed and non-adjustable...normal line voltage fluctuations or ambient temperatures from −38° to 200° F. have no material effect on these characteristics.

Yes, in chick incubators or diesel locomotives... wherever sensititivy and dependability are required...ADLAKE Relays can be counted on. Send for complete Relay catalog today...The Adams & Westlake Company, 1176 N. Michigan, Elkhart, Indiana. In Canada, write PowerLite Devices Ltd., of Toronto.

EVERY ADLAKE RELAY IS TESTED
—AND *GUARANTEED*
—TO MEET SPECIFICATIONS!



Type 1045 Quick-Acting Relay contact either normally open or normally closed.

THE Adams & Westlake COMPANY

Established 1857 • ELKHART, INDIANA • New York • Chicago

Manufacturers of ADLAKE Hermetically Sealed Mercury Relays

Adlake TRADE MARK — 97th year of serving the transportation and building industries

Traffic Control

Rochester's Traffic Strainer

(*See also page* 137—*"Parking Within Rochester's Business District"*)

By LADISLAS SEGOE
City Planner and Consulting Engineer
Cincinnati, Ohio

AS AN EXAMPLE of the application in a large city of the *Municipal Index* basic "Traffic Strainer" plan in many of its features, I refer you to the map of Rochester, N. Y., on the front cover of this magazine. The principal features of this plan are:

1. An Inner Belt or Loop of controlled-access design about the present and prospective downtown business district, including ample allowance for parking space.
2. An Outer Belt or Loop also of the controlled-access type, approximately at the outer limits of the urban and urbanizing core of the Rochester Metropolitan Areas.
3. A number of radial arterials, several of these of limited- or controlled-access design.

The Rochester plan differs from the *Municipal Index* basic plan chiefly in two respects:

1. The Inner Belt was purposely located as close-in as practicable in order to induce all-day and long-time parkers to walk the three or four blocks from parking facilities just inside this Belt to their places of work or other destinations.
2. The entire arterial pattern was so designed as to be adapted to providing the type of express transit service which will induce as many downtown workers as possible to leave their cars at home and ride the buses instead.

The major portion of the west leg of the Outer Loop and one-half of the Inner Loop west of the river have been built. A new bridge on the Inner Loop is now under construction. Scheduled for completion in the next 2-3 years are all of the Inner Loop and the Outer Loop on the west side, as well as the east connection to the New York State Thruway.

As I see it—in our larger cities, at least, which now have, or may be expected to have, one or more radial expressways—the most promising and practicable way of providing a transit service which can effectively compete with the private automobile, is to utilize these expressways for express transit operation.

The gas or trolley coaches would operate as locals in the outlying residential or industrial sections where they would pick up most of their loads. They would enter the expressways over ramps provided for general traffic, and would then operate as express lines to the downtown area where, once again, they would operate as locals distributing their loads. Operation in the opposite direction would, of course, be in a similar manner. Some units might be routed through the downtown area, at certain times of the day at least, if found desirable.

Such service does not involve physical transfers from local transit vehicles to rapid-transit vehicles, or from private cars to transit vehicles—both a serious handicap in any effort at luring the motorist away from using his car on his daily trips downtown, unless there is no long-time parking in the business district.

The expressway plans of Rochester and Buffalo, N. Y., and of Richmond, Va., were designed with this type of rapid-transit operation in mind; and the transit systems we recommended in Cincinnati and San Francisco, also contemplate rapid-transit of this type, in the latter city in combination with rail rapid-transit and downtown subway.

Need for Fringe Parking Areas

Fringe parking areas such as in the *Municipal Index* basic plan will still be necessary. Since not all parts of the city can be provided with the type of express service just described, motorists from parts not so served will probably continue to drive downtown and will need to be served with the kind of fringe Parkport-Transit service as in the *Municipal Index* basic plan.

Motorists residing beyond the outer limits of local transit service might prefer to use parking areas located along the expressways near the outermost stops. Shoppers and workers in occupations requiring the use of their cars during the day will continue to need parking facilities close by which should be located not within but just outside the core of the shopping district.

The application of the plan in a small city, as illustrated and described in the *Municipal Index* 1954, is probably as good an accommodation as can be devised under the limiting circumstances. Solutions of this sort, consisting of by-pass routes flanking the central business district just far enough out to provide space for parking areas and for reasonable expansion, we have found almost self-evident in a number of small and medium-sized cities. Among cities for which we have prepared comprehensive plans in recent years—Middletown and Elyria, Ohio; St. Albans, W. Va.; and Hopkins, Minn.—are good examples.

* See "Every City a Traffic Strainer," in the 1953 *Municipal Index*, pages 914-920, and THE AMERICAN CITY, April 1953, pages 94-96, and June 1953, pages 106-107; also the forthcoming 1954 *Municipal Index*.

Chicago Acquiring Parking Areas Outside Business District

CHICAGO TRANSIT AUTHORITY is making a city-wide survey of parking areas adjacent to rapid-transit stations outside the central business district.

Walter J. McCarter, CTA general manager, said "Our intention is to induce motorists to park their cars at conveniently located outlying stations and complete their trips by rapid transit which is generally free from street-traffic interference." The lot locations, capacity, use, and rates will be published in a booklet for distribution to motorists.

The information will also be studied by the Chicago Transit Board and the City of Chicago in connection with any expansion of the parking-lot construction program recently initiated by the city.

Relax, Mr. Traffic Engineer

give PRISMO CONTRACTING SERVICE your striping problems

Here is a unique and valuable service that will enable you to get your striping projects done quickly, expertly, and with absolutely no strain on you! Sound interesting? It is, and helpful, too! It's Prismo's Contract Technician Service—a comprehensive "package" which offers experienced, factory-trained crews of technicians together with the proper equipment and the very finest in reflective marking materials . . . all furnished on a contract basis to handle *your* specific marking problem. This service has been used successfully the country over. Regardless of your marking problem—highway or municipal striping, industrial marking, airport striping, etc.—you can save time, trouble and expense by calling on Prismo Contracting Service.

Write, wire or phone today for full details.

PRISMO
SAFETY CORPORATION
HUNTINGDON • PENNSYLVANIA

Status of Red Stop Traffic Signs

To the Editor of THE AMERICAN CITY:

An item on red stop signs, on page 147 of the February 1954 issue of THE AMERICAN CITY stated that, "The red stop sign was recommended last June by the Joint Committee on Uniform Traffic Control Devices. The recommendation was for reflectorized white STOP letters and reflectorized red background, so that the sign will be brightly visible both day and night."

While several states have already approved the use of the so-called Red Stop Signs, nothing has been done by the Joint Committee on Uniform Traffic Control Devices.

At a meeting of the American Association of State Highway Officials, in Pittsburgh, in November, the matter was discussed and, as a consequence, a Committee has been appointed to study it and report next year. A Sub-Committee recommended, last year, such combination of red and white as might be presented by the several manufacturers. This has not been acted upon and it is the consensus that it will not be acted upon for another year-and-a-half or two years.

Section 29 of the present manual of Uniform Traffic Control Devices states, "Pending further information, however, the Committee recognizes a number of panel arrangements, and while for the sake of uniformity it specifies yellow as the standard background, it does not disapprove the red background in the absence of any conclusive evidence showing it to be less effective than the yellow."

Actually, any recommendation made by the Committee would include not only the red reflectorized background but also a painted red background with reflectorized copy.

JOHN H. WRIGHT
Reflexite Corporation
New York 5, N. Y.

EDITORIAL NOTE: When John H. Wright of Reflexite Corporation advised us that the red background had not been recommended by the Joint Committee, we obtained from Wilbur S. Smith, a member of the Committee, a verbatim excerpt from the minutes of that June 1953 meeting, as follows: It was "voted that the stop signs shall have a red background with white letters, that the message must always be reflectorized and that the background may be reflectorized. Other design details will remain unchanged as set forth in Section 29 in the Manual, except that center panels will no longer be optional."

This was, of course, a recommendation by the Joint Committee representing the Institute of Traffic Engineers, and the American Association of State Highway Officials, and the National Conference on Street and Highway Safety. The recommendation has not been acted on by these three organizations.—*Editor.*

Traffic Violators Get 2nd Chance in Livonia

MOTORISTS stopped for traffic violations in Livonia, Mich., find that the first ticket is "for free." But, if nabbed a second time, the motorist must appear in court and pay the fines on both tickets.

James Hagen, Livonia's director of public safety, said: "Naturally, we're not issuing 'two-chance' tickets to persons who commit serious offenses, such as reckless or drunken driving. Improper turns and parking violations are typical offenses that will rate a second chance to a first offender."

Our New Baby...
Budget Priced Striper for Industry...Small Cities and Towns
REFLECTO-LINER, Jr.
It's NEW!
It's the Reflecto-Liner, Jr. and it's the budget's best buy for 1954. Unbelievably low priced, this mighty mite will give you big-machine striping performance on every job. From its mono-unit frame to the ample 9.3 cu. ft. compressor, this machine is a splendid example of Wald's carefully researched engineering. Maximum efficiency for applying either plain or reflective traffic paints is assured with the powerful 4 cycle, 2.5 horse-power engine and large 5 gallon paint supply tank. The vertical, horizontal and radial adjustments on this easily maneuvered machine offer extreme versatility and permits laying of 2"-4" lines right up to the curb.
Designed especially for Factories, Parking Lots, Airports, Small Cities and Towns, County and Township roads, the Reflecto-Liner, Jr. will do a man's sized job and can be purchased at a "petty cash" price.
Write, Wire or Phone Today for Bulletin 509.
WALD INDUSTRIES, Inc.
HUNTINGDON, PA.

Model 10 Automatic Signals

PERFORMANCE-WISE Model 10 Automatic Signals have established an accident prevention record unequalled by any other safety device: *Not a single accident has ever occurred as a result of operation failure on the part of these signals.*

COST-WISE Model 10 installations add up to true economy. Their initial cost is low and their operation cost is small. Cost analyses prove that Model 10's are the "best buy" in grade crossing safety, year-in, year-out.

Find out why Model 10 Automatic Signals are the top choice of traffic experts everywhere. Write for complete information. Ask for "Grade Crossing Safety is Your Business." Request Brochure No. 748-AC-454

WRRS

WESTERN RAILROAD SUPPLY COMPANY

General Offices and Factory.
2428 SOUTH ASHLAND AVENUE • CHICAGO 8, ILLINOIS

Parking Within Rochester's Business District

(See also page 133—"Rochester's Traffic Strainer")

By FLOYD F. WALKLEY
Director
City Planning Commission
Rochester, N. Y.

ONE OF THE PRINCIPAL reasons for congestion in a business district may be attributed to the disconnected relationship between the location and operation of parking facilities and the patterns of land use and traffic within the area.

The map on the cover of this issue of THE AMERICAN CITY shows the proposed arterial plan which includes an outer loop about the periphery of the city with connecting arterials to an inner loop around the city's business district. The article by the consultant Ladislas Segoe, describes the arterial plan which has been projected by joint planning efforts of the New York State Department of Public Works and the City of Rochester.

The map on this page shows the inner loop around the business district, together with the existing and several proposed off-street parking facilities within the loop and adjacent to it outside. There are 147 existing parking facilities and 4 proposed within the loop, and 23 existing and 1 proposed outside.

The 170 existing facilities have a capacity of 13,320 car spaces. The gross area contained within the inner loop is about 360 acres. The net area (excluding the river and streets) is 258 acres of which approximately 54% is occupied by retail trade, small industries, warehouses, hotels, offices, etc.; 17% by parking; 11% by public and semipublic uses, and 18% by residences.

Revealing Features of Parking Survey

An intensive parking survey conducted in 1950 revealed some interesting data on parking demand and habits as related to the land-use pattern. As a means of analysis, two "core areas" were delimited. The "primary core," east of the river (at right), encloses the retail area and a majority of the financial institutions, numerous office buildings, and the theater district. The "secondary core," from the river to the west section of the inner loop, is predominantly an office district tenanted primarily by legal and real estate concerns, adjacent to city and county courts and administrative buildings.

The survey indicated that all-day parkers were occupying space within the "primary core" where relatively short-term parking demand was not being met. The parking pattern in the "secondary core" was predominantly long-term but again revealed, in a lesser degree, that the early bird, the worker, occupied space that should have been available for "customer" parking.

Although the city has developed a number of metered lots, most of which would seem beyond the desirable walking range of short-term parkers, it has been noted that several on the periphery of the "primary core" are being used by shoppers either through necessity or choice.

Change in Concept Needed

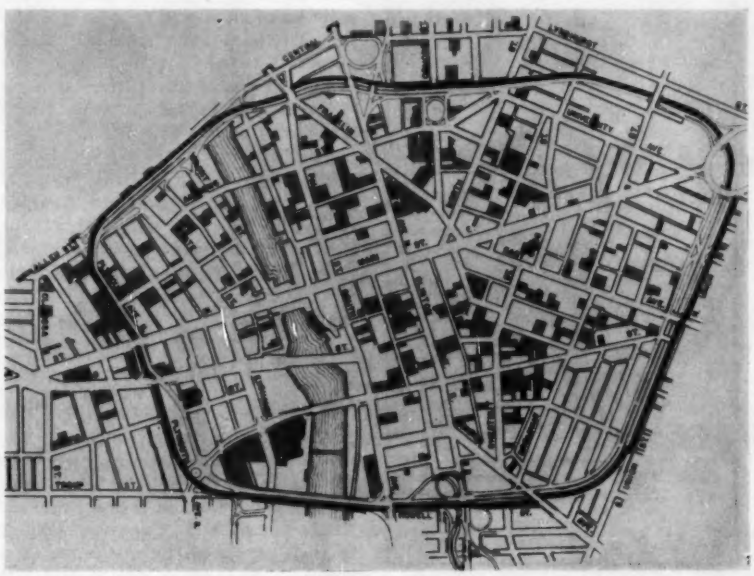
No comprehensive long-range parking plan integrated with the land-use pattern, the inner loop, and the inner-street system, has been developed as yet. The concept that the parking business per se is one of the business district's major functions will have to be replaced by recognition that it is merely an essential accessory service to be provided and operated in conformance with the district's over-all conditions and requirements.

It seems obvious that a means of discouraging long-term parkers in the "primary core," and to some extent in the "secondary core," should be one of the major activities of such a plan.

A ring of reasonably convenient parking terminals immediately inside the inner loop might be provided for the long-term parkers. The advantages of lower rates as well as quick accessibility to the arterial system would possibly compensate for the extra walking requirement.

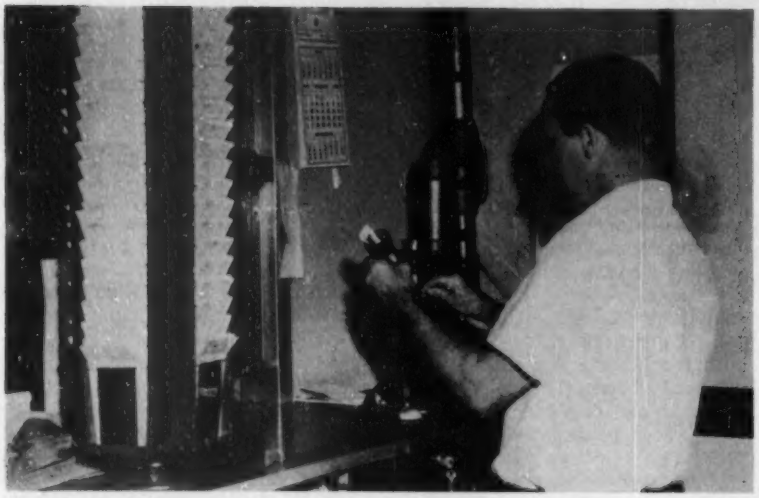
It is most important that certain adjustments of the inner-street system to effect a better continuity of traffic flow within the business district should be coordinated with the parking plan.

The traffic problem does not cure itself by being left alone or by a piecemeal attack. Neither is it possible to apply the full treatment at one time. Long-range comprehensive plans carefully projected to formulate a pattern for progressive improvements are the best assurance that public funds will be wisely invested.



Indicated on this map are the many parking areas, both existing and proposed, within and adjacent to the inner loop around the business district of the City of Rochester.

Airtubes Speed Parking Turnover



Via this airtube, the cashier at the Hippodrome parking garage sends identification checks to an attendant stationed on a parking island, notifying him to pick up a customer's car. After parking the car, the attendant returns to the cashier, via airtube, the three-part stub, which is filed on a rack until the customer calls for his car.

AT THE HIPPODROME garage, one of New York's newest, airtubes speed the handling of a daily average of 1,000 cars. The airtube system, engineered by Lamson Corporation, of Syracuse, N. Y., takes care of all communication between the cashier's booth in the customers' waiting room and the attendant's station on the parking island. This saves the attendant walking to and from the cashier's window to pick up orders and turn in stubs, and saves the customers' time by faster service. It also keeps them in a warm, sheltered waiting room.

A five-part parking ticket is assigned to each car. The bottom part is a claim check which the customer receives. The top part (carrying a large, easily read identification number) is put under the windshield wiper of the car. The three remaining parts of the ticket are stamped by a time clock to show what time the car was received. The three ticket parts are then forwarded via the pneumatic-tube system to the cashier's office.

CAR CHECK
16751

RELEASE CHECK 16751
Section License No. MAKE

ATTENDANT CHECK 16751
Section License No. MAKE

OFFICE CHECK 16751

CUSTOMER CLAIM CHECK 16751

This five-part parking ticket accelerates the service at the Hippodrome garage.

Claiming Cars

When the customer returns, he presents his claim check at the cashier's window. The cashier finds the matching three-part stub, checks the elapsed time, and charges the customer accordingly. The release check is then given to the customer as a receipt. The office check and the turned-in claim check are held for accounting records. Meanwhile, the attendant's check has been forwarded via the tube to the attendant's station, where the attendant removes the check and gets the customer's car.

Without the airtube system the attendants would spend a total of nearly 35 man-hours per day in making nonproductive trips. The flexibility in an airtube system permits an initially small installation to be adapted easily to meet the demands of a growing traffic load.

By Their Accidents Ye Shall Know Them

MICHIGAN — like most states — licenses murder on the highways. For highway safety includes car design and construction, highway design and construction, highway markings, and the driver, says the Citizens Research Council, of Detroit, Mich.

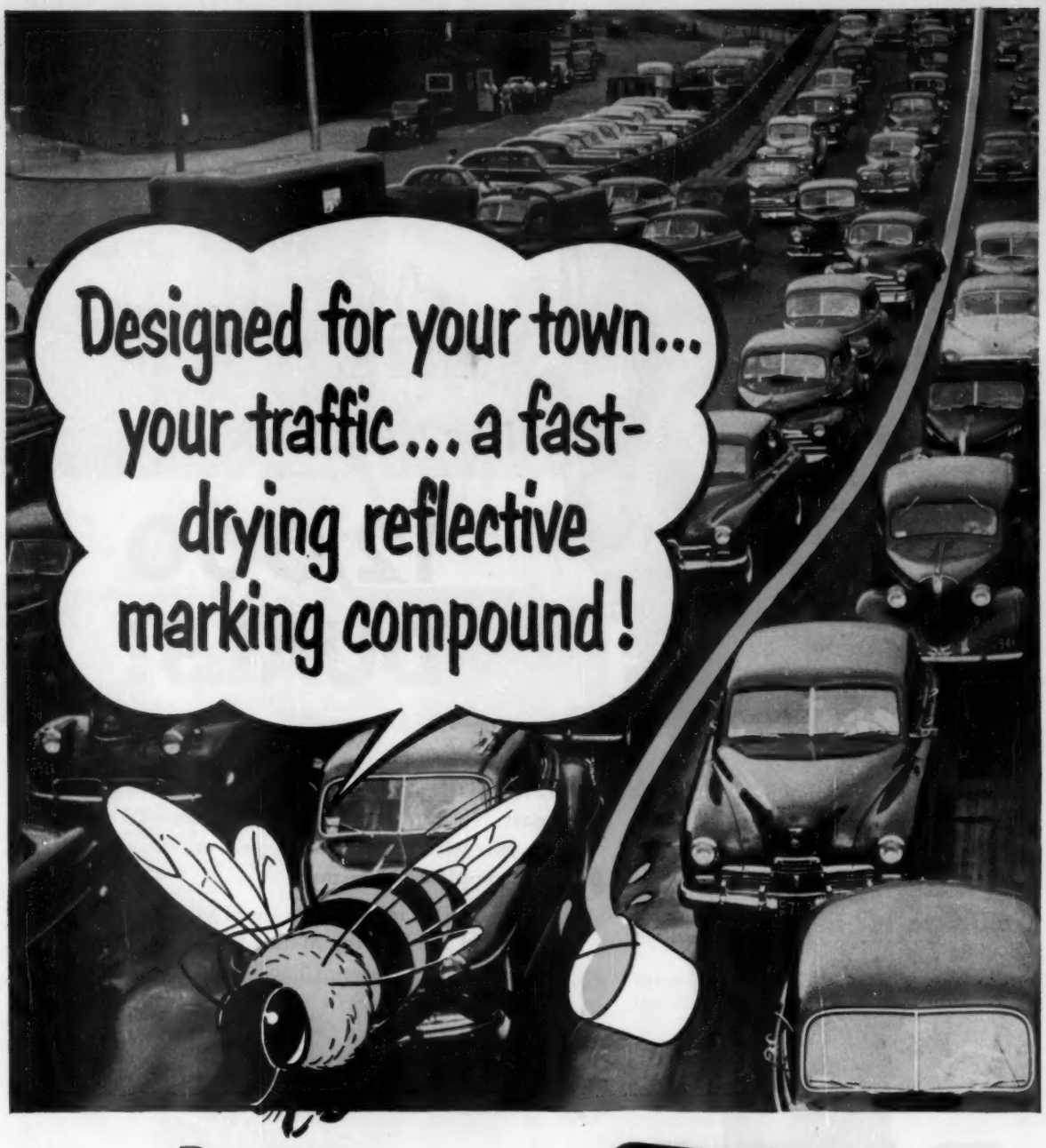
Drivers are given an eye test, a test for knowledge of traffic laws, and a limited driving test (if given) for mechanical driving ability. In many instances the so-called examining process has been nothing more than a farce.

In highway safety, one of the first jobs is to take, or keep, bad drivers off the road, but the best possible examination will never detect a very large percentage of bad drivers. Though it be the hard way, only experience will do it.

Importance of Driver Records

An examination may test mechanical ability to drive a car; only a record will disclose driving "attitude," which is fully as important as mechanical ability. This then, would clearly seem to indicate the need for a complete record on each driver, insofar as that is possible and regardless of where in the state any moving violation or accident may have taken place.

A cumulative, comprehensive record of that sort is a beginning necessity if bad drivers are to be detected on the basis of their records. And only by their records can they be detected.



BEELINE BRAND

Reflective Compound ends long traffic tie-ups!

FAST-DRYING, ***Beeline Compound exceeds the most rigid durability requirements. Apply with standard equipment.*** **Flows on smoothly, easily. Try 100 gallons and see for yourself — order from your regular supplier.**

PREMIXED **BEELINE** BRAND

REFLECTIVE STRIPING COMPOUND

Made by the makers of "Centerlite" Reflective Compound

3M

Made in U.S.A. by Minnesota Mining and Mfg. Co., St. Paul 6, Minn.—also makers of "Scotch" Brand Pressure-Sensitive Tapes, "Scotch" Sound Recording Tape, "Underseal" Rubberized Coating, "Scotchlite" Reflective Sheeting, "Safety-Walk" Non-slip Surfacing, "3M" Abrasives, "3M" Adhesives. General Export: 122 E. 42nd St., New York 17, N. Y. In Canada: London, Ont., Can.

For New York...

12,000 DUALS!

For the largest or smallest city, from coast to coast, North to South, for all climates—DUALS are *your* best bet for year in, year out economy and complete satisfaction.

For detailed information on SINGLE or DUBL-DUAL Parking Meters for on-street or off-street service—write *The Dual Parking Meter Company* (subsidiary of The Union Metal Manufacturing Co.), *Canton 2, Ohio.*

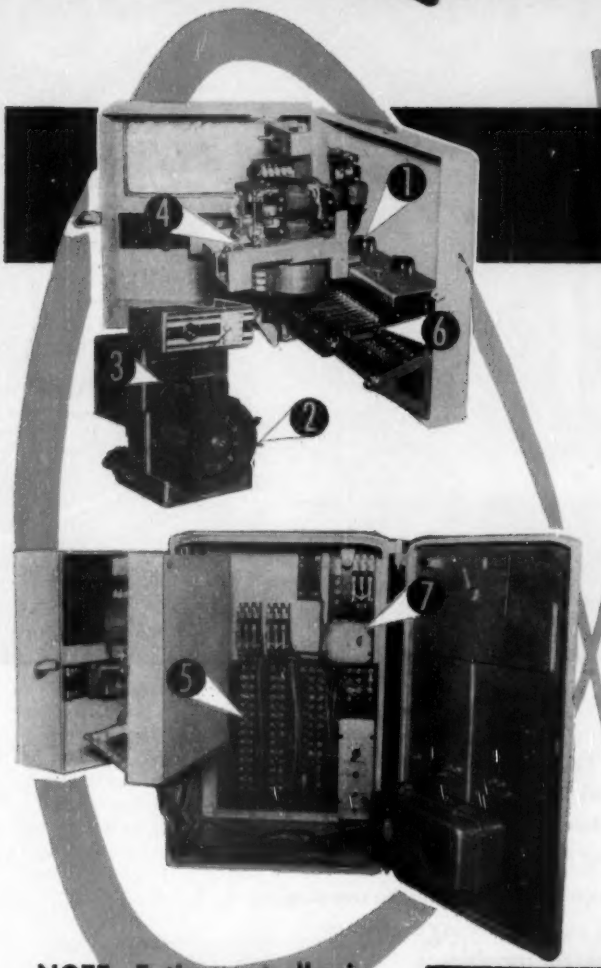
DUAL the Original...

the friendly **PARKING METER**

Ask for a demonstration of the NEW **EAGLE**

"EF20" TRAFFIC CONTROLLER

THE MOST Accessible



THE MOST Flexible

Designed for easiest maintenance and the demands of future development.

1. Cycle unit electrically and mechanically jack plug connected. Synchronous disc motor is jack plug connected to cycle unit.
2. Resets adjustable from the front of the dial.
3. Dial contacts visible and accessible.
4. Cycle gears changeable from front of controller.
5. Easily accessible terminal panel wired for all auxiliary features.
6. Wired complete for 19 circuits.
7. Easily accessible jack mounted flasher.

NOTE: Entire controller is accessible from front. Mechanism swings out.

EAGLE SIGNAL CORPORATION *Moline, Illinois*

EFFECTIVE APPROACH. Note the excellent lighting of this approach to San Francisco's Broadway Tunnel. Illumination of the tunnel and its approaches recently won first prize for Merrill R. Humber of the Humber and Walker Company in the nationwide I.E.S. contest, "My most interesting lighting job".

The twin-bracket pole in the foreground and the single-bracket poles on the overpass are all Union Metal Monotubes. Backed by unmatched pole engineering experience, Monotubes are *your* best bet for *any* street lighting need. For complete-line catalogs, for helpful planning service if you wish, write to The Union Metal Manufacturing Co., Canton 5, Ohio.

UNION METAL

Monotube Lighting Poles

Penta Poles Carry Mercury Luminaires

Before and after turning on the new mercurys at the intersection of Bolton and Larissa Streets in Jacksonville, Texas. Star images of the old uprights and the reflection from the undersides of unconnected new fixtures show the light lost toward the sky. The exposure of the "before" shot had to be considerably longer than that of the "after" exposure, or the contrast would have been greater than these pictures show.

JACKSONVILLE, TEXAS, a clean, attractive, rapidly growing city in Cherokee County and home of the "Tomato Bowl," turned on a new street-lighting system on October 16, 1953. It replaced 67 fixtures of the 1920's with white glass canopies. Although the old fixtures consumed 295 watts and were rated at 6,000 lumens each, Southwestern Electric Service Company's Vice-President and Division Manager Frank C. Rand says that three-fifths of that light went skyward.

An early step in the planning of the new system was consultation with lighting specialists. The General Electric Company supplied the fixtures and their illumination engineers helped draw up the plans. The new system consists of 100 mercury-vapor lamps of 400 watts and 20,000-lumen output.

Treated Pine Poles

The luminaires are mounted on select southern pine poles, pressure treated with pentachlorophenol to eight pounds retention, after all fabrications. This preservative method of treatment is a product of The Dow Chemical Company, of Midland, Mich.

Following the preservative treatment, the poles were seasoned three months. First the knots and then the entire poles were given a coat of Western Pine Association knot sealer No. 478. This was followed by a single coat of aluminum paint. The poles were supplied by Southern Pine Lumber Company, of Diboll, Texas.

Special measures were taken to avoid scarring the poles when they were erected, by giving them a padding wrap. Attachment of mast arms, ballasts, wiring, was performed from ladders to avoid scarring the poles with climbing spurs.

Hollis Duncan, Southwestern's purchasing agent, estimates $30 to be the cost of each pole after penta treatment; plus $10 for knot sealer and paint, and $8 to dig a hole and erect the pole—a total installed cost of $48.

The new system covers 25 city blocks and provides from 60,000 to 160,000 lumens per block, the higher level in the busier areas of Jacksonville.

A photoelectric cell turns on the system at dusk or when the natural light falls below 5 foot-candles. Connected load of the entire system, including lamps, ballasts, and line losses, is estimated to be 45 to 50 kilowatts.

THIS MAGAZINE IS NOT COPYRIGHTED

Readers may quote freely from any article not indicated as copyrighted by the author, provided proper credit is given.

What CROUSE-HINDS *Super-Trafflex* Control System can do for you

Type GF-5 Single Dial *Super-Trafflex* Secondary

Type GF5-DD Two Dial *Super-Trafflex* Secondary

Type GF5-TD Three Dial *Super-Trafflex* Secondary

1. Crouse-Hinds *Super-Trafflex* controllers provide the most flexible and reliable traffic control system available to traffic engineers. They are the product of highly-skilled engineering and precision manufacturing.
2. The system consists of a *Super-Trafflex* master controller at some central point, and a *Super-Trafflex* secondary controller at each intersection.
3. Speed of traffic may be varied at any time as traffic density and weather conditions may require. The master will provide as many time cycles (usually five) as required; each separately variable from 40 to 120 seconds gradually throughout the range. These time cycles may be programmed for different times of the day and days of the week.
4. Since the time cycle change is independent of dial selection, it is possible to operate single and multi-dial secondaries from the same master, all at a common time cycle.
5. Secondaries remain in step during time cycle change.
6. Dial selection may be programmed from the master.
7. Secondaries remain in step during dial change.
8. Standard secondaries provide 15 separate and independent color circuits and 16 intervals. A change in color sequence is made by resetting permanent steel lobes in bakelite cams, which are color-coded for easy identification. Cam units for 21 and 27 color circuits are available.
9. The basic, underlying principle of the *Trafflex* control system has been proven by 25 years of successful operation throughout the world. Any *Trafflex* secondary ever built will operate from a modern *Super-Trafflex* master.

Send for additional information.

Type GFM *Super-Trafflex* Master Controller for the Automatic Selection of Five Time Cycles

CROUSE-HINDS

A Nationwide Distribution Through Electrical Distributors

CROUSE-HINDS COMPANY
Syracuse 1, N. Y.

OFFICES: Birmingham — Boston — Buffalo — Chicago — Cincinnati — Cleveland — Dallas — Denver — Detroit — Houston — Indianapolis — Kansas City — Los Angeles — Milwaukee — New Orleans — New York — Philadelphia — Pittsburgh — Portland, Ore. — San Francisco — Seattle — St. Louis — St. Paul — Tulsa — Washington.
RESIDENT REPRESENTATIVES: Albany — Atlanta — Baltimore — Charlotte — Corpus Christi — Reading, Pa. — Richmond, Va. — Shreveport
Crouse-Hinds Company of Canada, Ltd., Toronto, Ont.

TRAFFIC SIGNALS · CONDULETS · FLOODLIGHTS · AIRPORT LIGHTING

A Touch of Distinction Given the Avenue of the Americas

THE $50,000 CONTRIBUTED by owners, merchants, and businessmen on old Sixth Avenue, now the Avenue of the Americas, in New York City, has been translated into mercury-vapor luminaires that have been installed at city expense, the first of them lighted on December 16, 1953.

"Ever since it changed its name from Sixth Avenue," said *The New York Herald-Tribune* in an editorial on December 17, "the Avenue of the Americas has been doing its best to take on a glamour befitting its lofty title. Progress at times has seemed slow. But the addition of new mercury-vapor street lamps atop aluminum-coated arching poles certainly lends a touch of distinction to the thoroughfare. Today's graceful and cheery mercury vapors — the very name conveys a sense of the romantic and futuristic—certainly marks a new high in both art and utility."

The 295 color-improved General Electric luminaires, which stretch for 3 miles along that 100-foot-wide avenue from Carmine Street to 59th Street, are said to make it the best lighted street in the nation's largest city. The 18,000-lumen lights provide an average initial street illumination of 1.4 foot-candles between intersections, and higher at the corners.

The fixtures, mounted at a height of 28 feet on Union Metal steel poles, project over the pavement on 8-foot mastarms. They are spaced about 70 feet apart in a staggered arrangement.

Ceremonies inaugurating the new lighting system were held in front of Rockefeller Center's Americas Building on December 15. Dominick F. Paduano, then New York Commissioner of Water Supply, Gas and Electricity, lit a whale-oil lamp of Old New York, which in turn activated an electric eye to turn on a four-block section of the new lights.

Commissioner Paduano commended members of the Avenue of the Americas Association for their civic interest in contributing to the cost of the installation. He pointed out that other streets in the city needed new lighting far more than the Avenue of the Americas, so the municipal government could not take on this expenditure at the present time. The owners and merchants did not want to wait, and set up the cooperative fund to pay for the lights. James S. Carson, president of the Association, expects the better street lighting to improve business on the avenue.

Contrast of new and old by daylight.

Merchants and City Share Costs

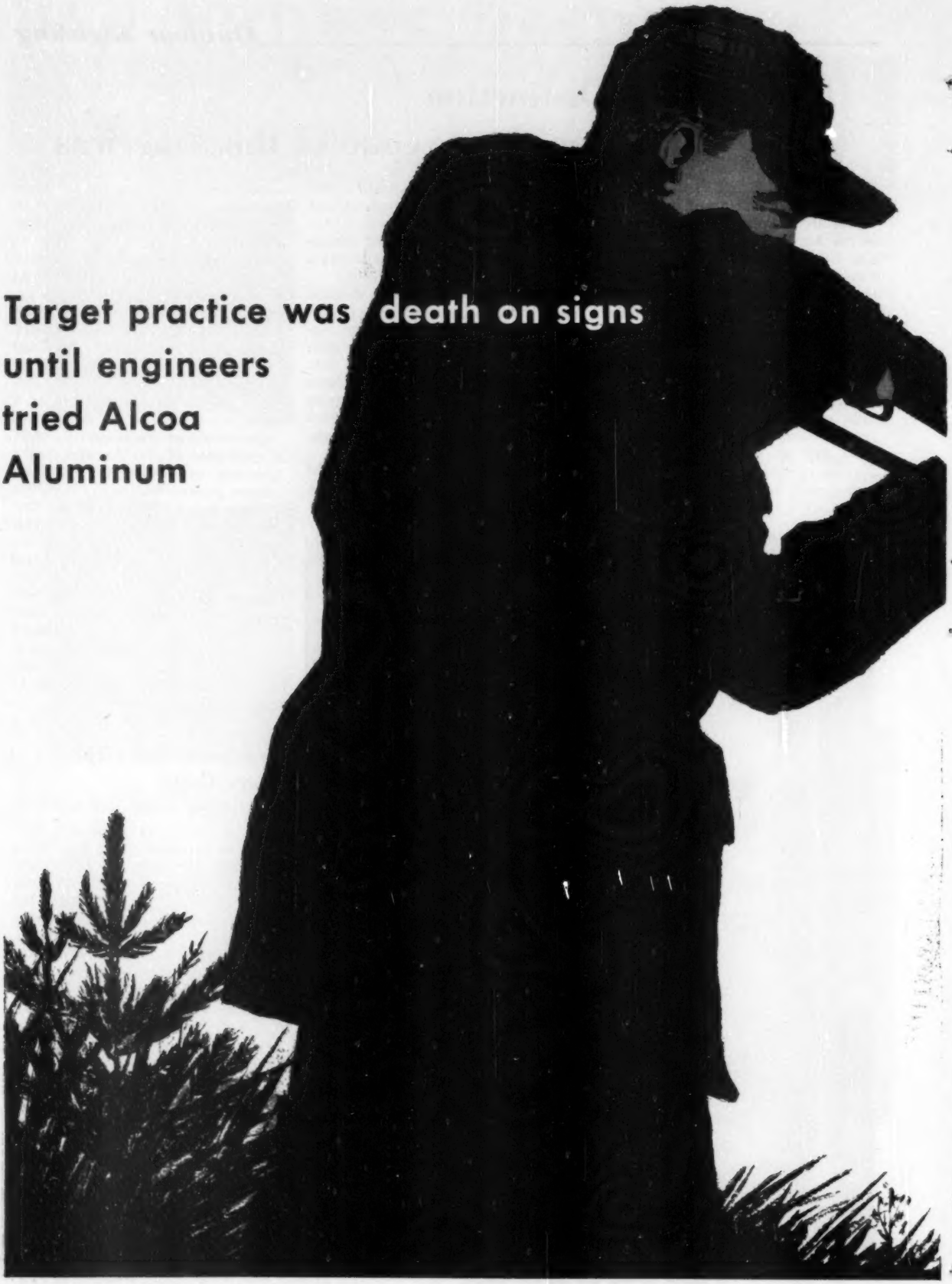
To the Editor of THE AMERICAN CITY:

At the meeting of our Zoning Committee in September 1948, one of the members remarked on the inadequacy of the lighting on the Avenue of the Americas. It was suggested that something be done about it. The gentleman who made the remark, S. R. Jackson, was made Chairman of our Lighting Committee. After some exploratory work we went to the Department of Water Supply, Gas and Electricity of which Hon. Dominick F. Paduano was then Commissioner.

With his help and the approval of the Borough President of Manhattan, plans were made and a drive for funds was begun. The Association would purchase the necessary lighting standards, luminaires, and bulbs, and the city would take care of all installation and maintenance. . . .

MILLARD HENLEIN
Executive Secretary
Avenue of the Americas Assn., Inc.
New York, N. Y.

Target practice was death on signs until engineers tried Alcoa Aluminum



When rifle slugs tear through a steel highway sign, only prompt and costly repainting can save it. For, once the protective paint film is broken, rust spreads relentlessly to destroy legibility and eventually makes scrap of the sign, itself.

Traffic engineers in eighteen states have found the answer to vandalism that tapped their budgets for thousands of dollars every year and created a major threat to highway safety. It's Alcoa® Aluminum. Even when bullets expose bare metal, there's no deterioration, so repairs can wait while the sign stays on the job. Savings are realized, too, on handling and erection, because aluminum signs weigh only half as much as steel.

GET ALL THE FACTS

Alcoa, with recommendations backed by 66 years of experience, offers you expert counsel on alloys, fabrication and finishing for painted and reflectorized signs and markers, bridge railings, gratings, lighting standards, barricades and fencing. Get the details by calling your local Alcoa sales office. Or write: ALUMINUM COMPANY OF AMERICA, 1976-D Alcoa Building, Pittsburgh, 19, Pennsylvania.

ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

...when speeding is your urgent traffic problem

Fast drivers are not only a menace to themselves and other motorists, but they also tie up valuable men in traffic control duty.

Speed Watch is the new electrical timing **system** that "clocks" speeders and actually reduces excessive speeding...first day in operation. Speed Watch is compact and fully portable... permitting set-up and effective operation by a single officer. The spare man can be reassigned!

Request additional information on coupon below. No obligation.

TRAFFIC HOUSE, INC.
P.O. BOX 201 MARSHALL, MICHIGAN

Gentlemen:
Please send Speed Watch Folder Number 2

NAME _____
ADDRESS _____
CITY _____ STATE _____
TITLE _____

MUNICIPAL

PORCELAIN OR BAKED ENAMEL STREET SIGNS
FLAT OR EMBOSSED . . . . . WITH OR WITHOUT FRAMES

TYPE S-60— with Porcelain Steel Frames
TYPE 37-B— Embossed Letters Without Frames

Only "MUNICIPAL" Porcelain Signs GUARANTEED For 15 Years

REGULATION TRAFFIC & WARNING SIGNS & POSTS
WITH OR WITHOUT REFLECTORIZED BACKGROUND

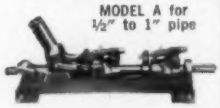
DETAILED SPECIFICATIONS, DESCRIPTIVE LITERATURE & PRICES OF SIGNS & POSTS ON REQUEST

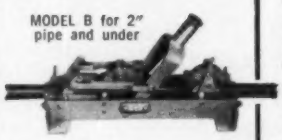
MUNICIPAL STREET SIGN CO., INC.
771 MEEKER AVENUE • BROOKLYN 22, NEW YORK

Trojan Pipe Puller & Pusher

installs or renews pipe under pavement

in half the time required by any other machine!





Exclusive continuous action, which eliminates all resetting of grip, does the trick!

The Trojan combines pushing and pulling operations in one machine —keeps pipe continuously moving —lets you install 40′ services in as little as 20 min.

Model A needs only 5′ trench. One man can easily install the average service. 15 tons of pushing pressure possible.

Model B is reversible in 30 seconds—has 3 speeds for different soils. New dog with individual inserts cuts maintenance.

Write today for full details!

The TROJAN Manufacturing Co.
1113 Race Drive • Troy, Ohio

New Lights and Old

PROPERTY OWNERS along Garey Avenue, and then along Thomas and Main Streets, West Second Avenue, and West Fifth Avenue, in Pomona, Calif., initiated proceedings for an assessment district to provide 21,000-lumen mercury-vapor lights. These lights project more than 13 times the illumination of the ones they replaced and direct it downward into the street where it benefits merchants and shoppers and contributes materially to traffic safety.*

The old units in the downtown section, installed in the early 1920's, sent most of their illumination skyward, yet they cost $7 per foot-candle, compared with 80 cents per foot-candle for the new lights whose installation costs were borne by the property owners in the districts served.

Maintenance crews make regular inspections of all street lights, checking the ornamental system twice a week and the other units nightly. There is also a program to repaint and systematically wash all electrolier posts and luminaires to keep them attractive as well as in good working order.

FREDERICK W. SHARP
Administrative Officer
Pomona, Calif.

Shoppers and merchants benefit from the new lighting installation at Gary and First Avenues in Pomona.

Thomas Street, looking northward across from the City Hall.

* The lighting standards were supplied by the Pacific Union Metal Co., Los Angeles, Calif.

All Westlake, Ohio, Village Paid for Lighted Sports Field

THIS IS THE STORY of a small community which needed a well-lighted recreational field. The high school wanted more people to attend and enjoy its games and bigger gate receipts to pay for athletic equipment. An additional spur was the fact that all the surrounding villages had lights on their football fields. To achieve this goal it was necessary for everybody in Westlake, Ohio (population 5,000), to donate $5.

A small group of men, as usual, did the work. They called at all the homes and collected in cash or pledges up to $50 from nearly everyone. Now Westlake claims to have the best-lighted field in Cuyahoga County. A number of local organizations donated trucks, tractors, a pump, and a crane, and operated them to get the project going. The scoreboard was a gift of the Coca Cola Company.

When the 80 General Electric floodlights were turned on, the field was bathed from corner to corner in brilliant shadowless light.

Westlake's citizens paid to provide this best-lighted field in Cuyahoga County, Ohio.

THERE'S ONLY ONE GENUINE TRAF-O-TERIA SYSTEM

The success of Traf-O-Teria System is no accident. It's the direct result of intensive study and intelligent experimenting in many communities. It is working smoothly and effectively in scores of communities today because of exhaustive ground work completed before it was ever put on the market.

And, there is only one genuine Traf-O-Teria System!

Briefly, it is a simple, courteous and effective method of assessing, collecting and accounting for parking meter fines.

The System brings these proven benefits:

- Better public relations, more good will—as the "sting" is removed from paying parking meter fines.
- Voluntary, prompt payment of a much higher percentage of fines.
- Substantial net savings in clerical, police officer and court time.
- Establishment of a simple, near-automatic, accurate set of controls for parking meter fines, easily administered by clerical workers.

If you are interested in building good will through collection of parking meter fines, it will pay you to use the coupon below.

TRAF-O-TERIA

El Dorado, Kansas

Mail Today for Free Information

Please tell me how Traf-O-Teria builds good will and how much it costs.

Name ..... Title .....

Address .....

City ..... State .....

The Walrus and The Cited Cities

["Eleven cities win awards for solving the problems haunting their homes and streets."—*Look* *]

"The time has come," the Walrus said,
"To talk of many things:
"Of streets unpaved and schools run-down,
"Of vice and gambling kings,
"Of jobless men and slums—from which
"A city's sorrow springs."

"The time has come," the Walrus said,
"To talk, and then to do:
"To oust the old, when it is bad,
"And introduce the new,
"And thus give all good men the town
"That they're entitled to!"

In Canton, Flint, the people heard;
In Scranton, Forest Park,
Peoria, Port Angeles,
Shreveport, they uttered, "Hark!"
In Petersburg and other towns
The wise words struck a spark.

Good citizens joined minds and hands;
They cried, "We're men, not mice!"
They won new schools and public works;
They drove out slums and vice;
They spread good will, and planned with skill—
And gladly paid the price.

"And now these towns," the Walrus beamed,
"Are happy and they're proud,
"And all you other towns that are
"Admiring them out loud—
"Join minds and hands and you can be
"In this exclusive crowd!"

A. S. FLAUMENHAFT

* See THE AMERICAN CITY for February 1954, pages 110-115.

Canadian Community Planning Association Seeks Staff Director

THE Community Planning Association of Canada has invited applications for the principal staff position in its national office. Applicants should have a general knowledge of community planning and municipal affairs, and must have an ability to prepare information and publications on planning subjects in nontechnical language. Applicants need not possess professional qualifications as planners.

The Association is a self-governing membership organization, supported by public and private funds. Its purpose is to encourage the development of town planning and regional planning in Canada. It has an established program of publications, and its membership extends into every province where it has organized divisions engaged in the promotion of local planning affairs.

Applications and inquiries about the vacancy, marked, "Appointment—Confidential," should be addressed to: The President, Community Planning Association of Canada, 169 Somerset Street West, Ottawa 4, Canada.

Rapid City, S. D., Sets Up Standards For Gasoline Truck Deliveries

By ROBERT CLUTE *
City Manager
Oregon City, Ore.

THE CITY OF RAPID CITY has long been dependent, to a great extent, upon truck transportation for the delivery of its gasoline supplies from the Wyoming oil fields. However, as the city grew so did the number of gasoline transports entering and leaving the city. The number of transports reached such proportions that they constituted a definite traffic and safety hazard and it became imperative that some type of control be instituted.

Last spring a meeting was held between city officials and representatives of the gas-transportation industry to discuss what could be accomplished as a remedial measure.

It was generally agreed that any regulation by ordinance should be avoided, if possible, and the entire transport industry was placed on its merits by means of a written agreement among all parties concerned. For discussion purposes a large 400:1 map of the city was prepared upon which all of the service stations in the city were located. A scheme was used by which each oil company was designated by color and their individual service stations located by this same color on the map. Traffic-flow charts and traffic counts were also utilized.

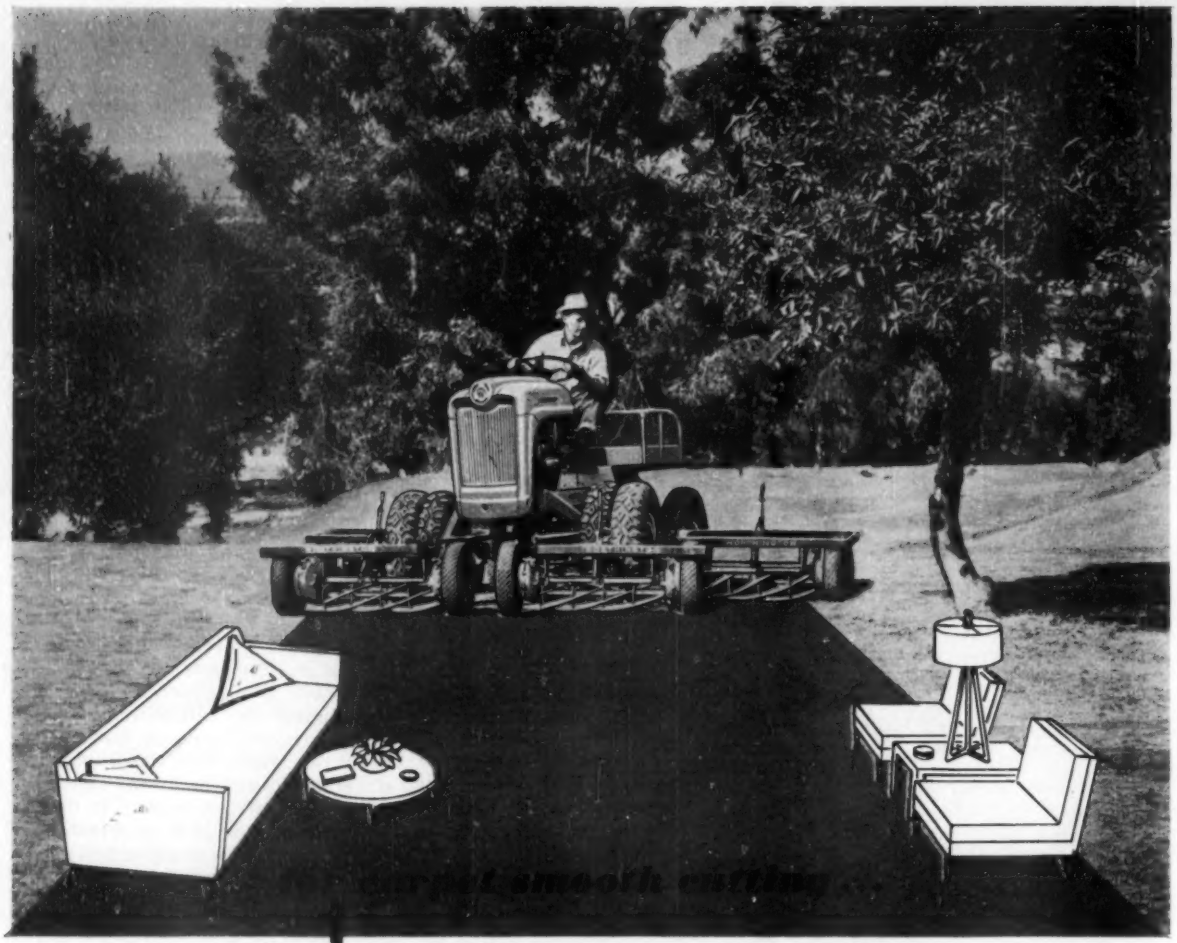
It was finally determined that gasoline transports should be defined as "all motor vehicles used for the transport of inflammable petroleum products and shall include any vehicle or combination of vehicles, such as semi-trailers and tractors and truck-pup combinations with an overall length of over 40 feet, and with a carrying capacity of a total of over 4,000 gallons." Any vehicle which did not come up to this definition was then classed as a tank truck.

Next, it was necessary to determine which service stations could be serviced by a gasoline transport. There was a great deal of pressure upon the city to continue the use of the large transports for direct refinery-to-station delivery and, therefore, bypass the bulk plants. Many of the stations, however, just could not accommodate these large trucks, either by reason of parking area or because of traffic congestion in their specific location. It was, therefore, necessary to make an individual survey of all of the service stations in Rapid City with a view to determining the amount of area available for parking the delivery vehicles, and their proximity to the central congested area. Consequently, each service station was designated as an A or a B station for purposes of delivery, determination depending on how each met traffic and parking requirements.

A truck-route system was worked out which ran roughly parallel to the main center of town. All delivery vehicles were required to keep on this designated route and leave it only by means of the shortest and least congested path, and only for the purpose of making gasoline deliveries. Also, it was further required that no left turns be made in the downtown area.

The final phase of the discussions centered around safety precautions during the filling operations. All drivers, of course, are required by their companies to use the utmost precaution at all times, but one very important safety device was agreed upon—the use of a locking device to be installed upon all fillers which would enable the hose to be locked tightly to the fillers during delivery operations. This was to prevent overflow

* Mr. Clute was formerly Planning Engineer of Rapid City, S. D.



it's **WORTHINGTON** *every time!*

Here's a winning team for smooth low-cost cutting on golf courses, parks, airports, parkways . . . the new Worthington Model "F" Tractor and Worthington Gang Mowers. The "F", a new concept in design, with front wheel drive and rear wheel steering, is a great gang mower power unit. Its Ford "Red Tiger" engine gives 20% more power for cutting on steep hills and over rough terrain. Big low pressure dual tires give added traction and minimum turf compaction. For proof of superior performance see the Model "F" in action. Ask your Worthington dealer for a demonstration or get the complete facts by writing for Bulletin W-109.

- ***20% More Power***—New Ford "Red Tiger" engine makes tough job mowing simple.
- ***Greater Driver Comfort*** — New adjustable steering column and E-Z ride seat reduces operator fatigue.
- ***High Maneuverability*** — Made possible by front wheel drive and rear wheel steering.
- ***Close Trimming*** — Mowers out front where the driver can see them makes close trim easy.
- ***Greater Cutting Efficiency***—Three, Five and Seven-Gang Units available for cutting swaths up to 17'6".

WORTHINGTON MOWER COMPANY
STROUDSBURG, PENNSYLVANIA

784

of gasoline in the event the drivers were not vigilant during delivery, or in case the amount of gasoline needed had been miscalculated.

There was very little discussion of tank construction, with the exception that the compartment size was raised from 600 gallons to 1,200 gallons. Under a new South Dakota law, enacted at the last legislative session, the State Fire Marshall will have control over the construction of gasoline-delivery vehicles throughout the entire state, and is required to follow the recommendations of the National Fire Underwriters.

The agreement between the city and the gasoline-transport industry was put in written form so that all concerned would be sure of the terms of the agreement. The enforcement was placed in the hands of members of the industry who are expected to bring pressure to bear upon any violators.

To date, the agreement is apparently working very satisfactorily and is an ideal example of the cooperation that a city can obtain without resorting to an ordinance which would be very difficult to enforce and which would need revision to meet changing conditions. Relations between the city and the gasoline-transport industry were very cordial at all times during the discussions and have continued upon a high plane of cooperation. Such an amicable relationship usually benefits both parties.

Lynwood Dedicates Modern City Hall

The Lynwood City Hall, showing the Police wing on the left and the Council chamber at the far right.

THE TRIM-LOOKING new City Hall and Police Department quarters dedicated by Lynwood, Calif. (population, 28,124), on December 14, 1953, is being financed on a "pay-as-you-go" basis through the accumulation of a special capital outlay of funds over the past several years.

It was through good planning by former Council members that the 8-acre site was acquired in 1948 for a future civic center. This center now includes a National Guard Armory and the newly dedicated City Hall and Police Department Building, and plans are being made for a new library, and for future development of an adult center building and auditorium. The Civic Center is adjacent to the city's 37-acre park where a new $375,000 natatorium is now under construction.

The single-story contemporary modern structure was built at the cost of $310,000 for a total area of 20,000 square feet. Careful planning for the convenience of the public is evidenced by the arrangement of offices and facilities, with generous areas provided for future expansion. Provisions were also made for a central cashiering system where all municipal bills may be paid.

The Council chamber is finished in a combination of split brick and wood paneling, with 80 upholstered seats. The Police Department quarters are said to be the most modern and complete in the state. They include a 25-yard pistol range, as well as separate juvenile quarters and complete jail facilities for both male and female prisoners. There is a central heating and air-conditioning unit for the City Hall and Police Department.

The entire area has been expertly landscaped, and parking facilities are provided for approximately 100 cars. Disposal of the old City Hall, built in 1928, was through a lease-purchase agreement with the newly organized Lynwood Unified School District, which will use it for administrative quarters.

H. M. CAMPBELL
City Clerk
Lynwood, Calif.

An interior view of the Council chamber.

THESE NEW TYPE... TRAFFIC SIGNS

AFFORD the SAME SERVICE at ½ the COST!

"EZ-ON" SIGN FACES by GRACE ARE APPLIED RIGHT OVER YOUR PRESENT SIGNS

1. You slip 'EZ-ON' Faces over old sign. *Note Wide Flanges.*

2. Then bend lange backward holding 'EZ-ON' Face in place.

3. Use special Crimping Tool to clamp flange and secure sign.

"EZ-ON" FACES BEING APPLIED at 6th & WASHINGTON in PADUCAH, KY.

SAVES TIME AND LABOR ... EZ-ON faces attached in only 5 minutes ... without taking old sign out of service!

STANDARD WARNING and REGULATORY COPY...

THEY'RE REFLECTORIZED

Here's a new idea in traffic signs that saves time and money! Now in use by Highway Departments in Kentucky, Ohio, Iowa, Missouri, meeting all requirements in reflective qualities and serviceability. They slip over your present signs restoring their 'newness', hence your old signs are never out of service. May be applied in 5 minutes! (See Illustrations). 'EZ-ON' Sign Faces are made of 30 ga. steel in 2 shapes ... Diamond and Octagon, 24 in. and 30 in. sizes. Standard and Special copy as you may require. INVESTIGATE ... and save!

SEE YOUR NEAREST REPRESENTATIVE OR WRITE US DIRECT

GRACE SIGN & MFG. CO.

3600 S. SECOND ST. ST. LOUIS 18, MO.

Economies in Sewage Treatment Construction

(*Continued from page* 84)

flexibility. The aeration tanks, for instance, are 33 feet wide with a water depth of 15 feet, a cross-section which is usually found only in the largest plants. Each of the two aeration tanks is connected directly to a final tank with the flow equalized by the weirs of these two final tanks. Omission of cross connections for aeration-tank effluent and for sludge returns simplifies piping. The tanks are equipped with easily maintained Chicago Pump swing diffusers to apply the air to the sewage.

Other Savings

Other features of the plant reduce construction and operating costs considerably: stop logs are used wherever possible in place of gates; metering is adequate, but simple as possible; and flow distribution through the plant is controlled hydraulically. The greatest economies have been effected by the use of air lifts for the sludge returns and other chores, and by the use of lagoons for sludge disposal.

Air lifts cost little more to install and require little more space than straight pipe. The lifts incur no maintenance costs whatever and offer complete flexibility over a range from zero to full flow. As the friction loss is reduced by the omission of valves, bypasses, and check valves, the over-all efficiency is as high as can be obtained with other means of sludge return.

The waste sludge containing the solids, removed by the treatment process, is digested in concrete tanks. The digesters have Pacific Flush Tank covers and external heat exchangers that raise the sludge temperature to the 90° F. temperature that is favored by bacteria. The heat exchangers use the waste heat from the gas engines.

The incoming sewage was settled in rectangular preliminary settling tanks with American Well sludge collectors. This tank shape is fitted into the over-all design. The conveyor type of collector has a strong and direct pull that is able to move the heavy primary sludge. On the return trip, at the water surface, the flights are very effective in skimming off the grease which collects on the surface of these tanks.

In the final tanks, the lighter sludge and absence of grease favored the use of a less expensive round tank with its long-wearing mechanism. Link-Belt rotating conveyor mechanisms are installed in the two 85-foot final tanks.

Lagoons

Digested sludge is pumped for 4,000 feet through an 8-inch cast-iron main to four lagoons near the south edge of the city. Because the sludge is well digested, there have been no complaints about malodor. The lagoons have a capacity of 1.2 cubic feet per pound of solids produced a year. The cost of the lagoons was $9,000, as compared with an estimated cost of about $80,000 for sand beds. No cleaning of the lagoons has as yet been necessary, and indications are that it will be a number of years before it will be required.

The construction cost of the sewage-treatment plant was just under $1,000,000, including the sludge lagoons and force main, a small pumping station at the west edge of the city, and about $10,000 for reconstruction of a wading pool.

since they don't build them this way...

we build 'em like this

"Mythological Miracle Cops" *might solve* today's problems of congested intersections, but Electro-Matic Controllers *can most surely solve* them both for today and tomorrow.

Traffic engineers and police officers the country over rely on "Electronic Brains" to expedite traffic flow more efficiently than by *any other method.*

Electro-Matic Controllers, operating *without* volumetric limitations, continually adjust to the ever changing patterns of traffic volume thereby clearing intersections faster.

Policemen, previously pressed into traffic duty, can now be utilized to better advantage. Thus, the aims of efficiency and economy are *both* realized.

Electro-Matic Controllers are designed to cope with *your* most difficult intersections. *For details, write for further information.*

TRAFFIC ACTUATED

AUTOMATIC SIGNAL DIVISION
EASTERN INDUSTRIES, INC.
NORWALK • CONNECTICUT

Night driving safety assured...

and prestressed HY-LITE SPUN-CRETE STANDARDS guarantee low-cost service for years

Prestressing is the biggest news in lighting standards for years. This exclusive feature of Hy-Lite Spun-Crete Standards assures much greater strength and durability.

Check these advantages:

1—GREATER RIGIDITY . . . Prestressing gives greater strength with maximum rigidity under designed loads and greater *flexibility* under overloads.

2—DEPENDABILITY . . . Preshrunk Hy-Lites are compressed. There's far less contraction and expansion under severe temperature changes.

3—LESS MAINTENANCE . . . The water-polished granite finish cuts maintenance to practically nothing. And graceful Hy-Lites keep their attractive finish for years.

It's easy to see why Hy-Lite *prestressed* Spun-Crete Standards are gaining wide recognition. Hy-Lite advantages can mean better, modern outdoor lighting for your community, too. Write for full details to the American Concrete Corporation, 5092 North Kimberly Avenue, Chicago 30, Illinois.

American Concrete

CENTRIFUGALLY SPUN-GRANITE CONCRETE LIGHTING STANDARDS

Tough Mowing Goes Faster...

THE FORD TRACTOR KEEPS BUSY

All Year 'Round

GRADES

The Danuser All Purpose Blade for the Ford Tractor reverses, tilts and offsets to handle grading, backfilling, ditching and many other dirt-moving jobs. You can change its pitch and angle, lift and lower it all from the tractor seat. Quickly attached—controlled hydraulically.

LOADS

Dearborn Industrial Loader lifts and dumps big loads fast—has plenty of "reach" to clear high-bodied trucks. Bucket controlled by 2 hydraulic cylinders. Separate hydraulic pump frees Ford Tractor's Hydraulic System for use with rear-attached tools. Extremely versatile—highly maneuverable!

PLOWS SNOW

You'll take winter weather, and the snow that goes with it, right in stride with this low priced Dearborn Blade Snow Plow. Six foot blade angles to windrow snow to right or left. Can be attached to universal frame or to Industrial Loader with adapter kit.

with a DEARBORN SIDE MOUNTED MOWER

and the FORD TRACTOR

For fast, clean mowing in tough conditions, this heavy-duty mower has what it takes! Just move the Ford Tractor's Hydraulic Touch Control lever and you lift or lower the cutter bar from almost vertical to 45 degrees below horizontal position . . . mighty handy for mowing banks, slopes and ditches. You can tilt the cutter bar up to avoid damage in rocky areas . . . tilt it down to get low-lying grass and weeds. For curb mowing, the inner shoe lifts a full 12 inches. And when an obstruction is hit, a positive automatic release cuts the tractor's ignition and the cutter bar swings back.

Yet with all these features, the smooth-running Dearborn Side Mounted Mower is priced exceptionally low. And, best of all, the low cost Ford Tractor that powers it can also save money and manhours on a wide variety of other jobs the year 'round.

Get proof of Dearborn Side Mounted Mower performance—of Ford Tractor versatility—by asking your nearby Ford Tractor Dealer for a demonstration. Ask him to show you the Dearborn Rear Attached Mower and the new Dearborn Rotary Cutter, too. Do it soon!

TRACTOR AND IMPLEMENT DIVISION
FORD MOTOR COMPANY
Birmingham, Michigan

Ford TRACTOR

Civil Defense Gains In New York City

"THE CITY'S 8,000,000 inhabitants are becoming increasingly aware that in Civil Defense lies their main hope of survival in event of enemy air attack," said Herbert R. O'Brien, Director of Civil Defense for the City of New York.

People enrolled in civil defense total 539,583, an increase of 19,632 for the year, including members of the regular police, fire, and transit departments.

In the Police Emergency Division, for example, the year's increase has been 6,800 and the total is now 201,666, including members of the regular force, auxiliary police, air wardens, building-control supervisors, and ground observers.

"Recent action in calling the 21,458 auxiliary police to work between the hours of 8 p.m. and midnight for training with the city's 19,000 regular uniformed police, has had a salutary effect in improving morale in this branch of Civil Defense," Director O'Brien said.

Zoning of Household Pets Poses Questions

WHEN DOES A PUPPY become a dog? And how many dogs make a kennel?

Questions like that have had to be answered by zoning ordinances designed to make sure that keeping pets does not extend so far as to become a commercial operation in a residential district.

The American Society of Planning Officials says that at least four communities: Muskegon, Mich.; Salt Lake County, Utah; and Los Angeles and Los Angeles County, Calif., agree that a puppy becomes a dog at four months. But in places where a "dog" is not so directly defined, the designation presumably follows the licensing practice, which ranges from four to eight months.

Los Angeles and Salt Lake Counties are in accord that keeping of three or more dogs makes a kennel. In other communities, ordinances lay down the rule that pups exceeding four in number must be removed from the home at maturity. That provision helps prevent the difficulties that may come from permitting a number of dogs, even though they are not for sale, to run about unpenned, the society says.

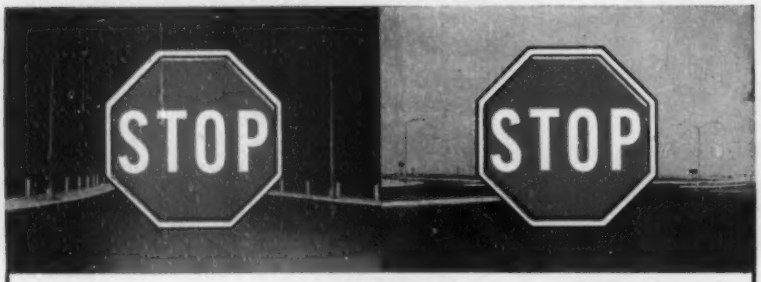
But the society points out that dogs that disturb, annoy, or injure persons may be declared a nuisance.

Cats seem to have escaped getting as strict limitations in zoning ordinances as dogs, although they have been named in some ordinances to clarify the term "household pets."

Zoning Treatment

Other zoning treatment of animals is noted in Los Angeles County's definition of "domestic animal" as an animal commonly kept in residence with man. In that county, buildings to house any domestic animal except a pig or hog may be erected in residential districts.

In some suburban zones in Los Angeles, the keeping of riding horses, poultry, rabbits, and chinchillas is permitted if the lot is used as a residence, not a business, and if the lot covers at least 20,000 square feet. Cows and goats are also permitted under the same restrictions.



RED MEANS STOP

APPROVED BY THE PUBLIC ROADS ADMINISTRATION

The new Tassco look in stop signs is destined to save many lives and avert accidents on America's streets and highways!

Many states have passed legislation approving this stop sign, and more have amendments pending.

Here is the stop sign that can *only* be interpreted as "Danger! STOP!" Its red color cannot be missed or confused with other signs. Most important, Tassco Red Stop Signs are reflectorized in both colors . . . drivers see the same sign, same shape, same colors both day and night!

If red stop signs are approved in your state, Tassco signs offer you a new, efficient tool to help better traffic control and safety. As all Tassco signs, the red stop sign is specially made and treated to resist weather and damage from other causes.

WRITE FOR FULL INFORMATION ABOUT TASSCO RED STOP SIGNS . . . and for the Tassco Catalog of Traffic and Street Signs in every category.

The Sign of TASSCO *Traffic Safety*

TRAFFIC and STREET SIGN COMPANY

84 FOUNDRY STREET • NEWARK 5, N. J.

Advance Planning and Timing of Public Works

(*Continued from page* 108)

of the problems is insurmountable, an advance agreement between the federal government and the state and local government units as to the most feasible methods of proceeding in the event of need is essential for the effective implementation of a public-works program.

If the advance planning which has already taken place for federal public works and the funds which have been requested in the 1955 federal budget to assist the planning of state and local public works were to be fully availed of, and if localities expedite their planning work, total public works could be increased quickly by several billion dollars in the event of economic need. To sustain such a higher level would require additional appropriations for federal construction and would require intergovernmental financial cooperation.

What Local Governments Should Do

The federal government has accepted its share of the responsibility for maintaining prosperity. But local governments are part of our society, and they, too, should accept and organize themselves to meet their responsibilities.

Acting through their established instruments at the Public Administration Clearing House, such as the American Municipal Association, American Public Works Association, Municipal Finance Officers Association, American Society of Planning Officials, International City Managers' Association, etc., and through the U. S. Conference of Mayors, and other organizations, they should attempt to formulate policies and to educate officials of the jurisdiction they represent as to the type of problems that may arise and how they should be prepared to meet them. They too should be developing policies and methods of action to meet their responsibilities should an emergency develop.

It is sometimes argued that public works cannot be expanded or even stabilized in a depression. Such adverse judgment about the efficacy of public works as an anti-cyclical tool has often been based upon what happened after 1932, when the credit of local governments had been severely strained by four years of severe depression. Too little attention has been given to what happened at the outset of the depression.

The volume of state and local activity increased 20% in 1930, and there was a further 5% increase in 1931. In constant dollars total public works expenditures, even as late as 1932, still exceeded the 1929 figure, though in current dollars they were down about 25%.

If vigorous steps are taken in other segments of the economy, as well as in construction—as was *not* done in 1930—it should be possible to reduce the strain on the credit of local governments and to shorten the time during which an anti-cyclical construction program might be needed.

The fact that public-works activity was sustained, in constant prices, above 1929 levels through 1932 may be more important for purposes of planning to avert another depression than the fact that public works did not return to 1932, or to 1929, levels during 1933, 1934, and 1935. It suggests that it is worthwhile to be prepared.

EDITORIAL NOTE: See article entitled, "Local Spending Policies—Their Role in Nation's Economy," on page 9 of *Our Municipal Notebook*.

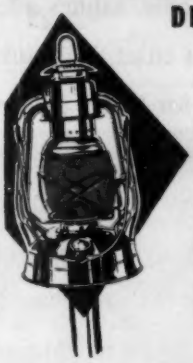
Rent the Air Above Parking Lots

AS LONG AS CITIES with traffic-congestion problems continue to compound congestion by building long-time parking facilities in the business district, methods of paying for them will be of keen interest. Mayor Orville L. Hubbard of Dearborn, Mich., asked the City Council either to build a second deck or rent the "air" above city parking lots for stores and offices. This would bring the city more revenue than do the meters below, said the Mayor.

Retail shops and offices constructed on concrete and steel pillars over the parking lots would not only bring the city a healthy income from rentals for expansion of the off-street parking system, but would also provide summer and winter shelter for parked cars plus comfort and convenience for shoppers found nowhere else in the United States.

The shelter provided by the canopy of stores and offices would also eliminate snow-removal expense and reduce the heavy maintenance costs brought on by weather-incurred damage to the parking-lot surfaces.

DIETZ
SIGNALS of SAFETY

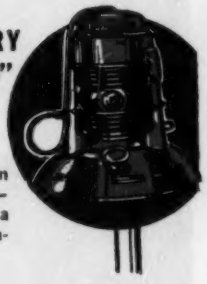


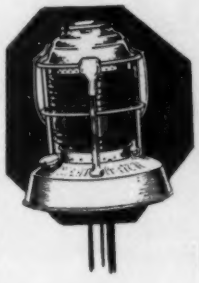
DIETZ TUBULAR LANTERNS

RED says DANGER. DIETZ LANTERNS say STOP. Light as needed, bright, or controlled without diminishment or failure till the last drop of kerosene. Rugged quality, economical performance. Backed by the oldest and largest manufacturer of portable light.

DIETZ-EMBURY "TRAFFIC-GARD" SAFETY LANTERN

"Magnified beam" seen for great distances—burns 100 hours on a pint of kerosene. Non-tip base.





DIETZ "NIGHT WATCH" SAFETY LANTERN

A miniature beacon with the new "Pencil Beam" visible from any direction close by or at long distances. Rugged, inexpensive, longest-burning, over 100 hours.

DIETZ HIGHWAY TORCHES

Complete line of bomb and flat base types in DIETZ *Blue* threaded collar burner models and DIETZ—EMBURY *Red* Cam lock burner models. Made to give faultless service under most severe conditions.

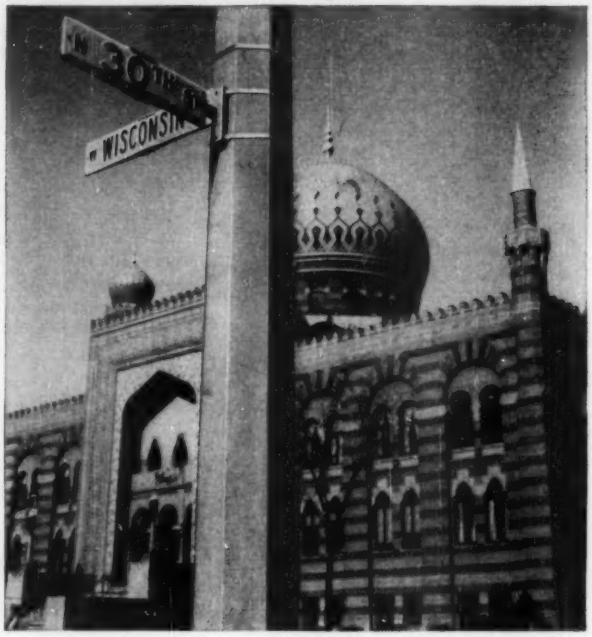
Send for Descriptive Folders

EST. R. E. DIETZ COMPANY SYRACUSE 1, N. Y. 1840

In Milwaukee...

STEELBINDER Fastens the Signs

A. J. Gerrard & Company, a leader in the steel strapping field, salutes a leader among America's great cities, Milwaukee, Wis. Always watchful for better and more efficient methods, Milwaukee's traffic department found Steelbinder the outstanding method of fastening street signs. Many other leading American cities have reported like findings. We invite you to investigate and compare.



A Milwaukee landmark, the new Shrine Temple.

Milwaukee officials and business leaders hail new street signs fastened securely with Steelbinder for the downtown shopping district.

Try Milwaukee's Method...

. . . the Steelbinder way of strapping signs. Our "Street Sign" brochures will familiarize you with this time-saving, economical, more efficient method of sign strapping. Write for them today . . . A Steelbinder service representative will gladly help you solve your sign strapping problems.

STEELBINDER

- Strapping in stainless or galvanized steel for sign applications. Also aluminum and many other strap types to fill every sign strapping requirement.
- Complete line of sign-attaching accessories—brackets, extension arms, bolts and seals in stainless and galvanized finishes.

STEEL STRAPPING

A. J. Gerrard & Co.

1950 HAWTHORNE AVE.
MELROSE PARK (CHICAGO SUBURB) ILLINOIS

WAREHOUSES IN 6 KEY CITIES

BIRMINGHAM
CLEVELAND
LOS ANGELES
NEWARK
OAKLAND
PORTLAND

Sales-Service Offices in 45 Principal Cities

Suburban Growth And Metropolitan Importance

[THE AMERICAN CITY *is indebted to Joseph S. Slavet, Executive Secretary of the Boston Municipal Research Bureau, for suggesting that the following editorial from the* Boston Herald *of January* 16, 1954, *is well worth reprinting*]:

Still Hub of the Universe

THE volcanic eruption of people from cities into suburbs has caught the attention of the nation. But the city is still the heart of the metropolis.

The suburbs exist only as satellites to the downtown area. Take away the downtown area and the suburbs would become ghost towns.

The shopping centers are dependent on branches of the large department stores with their vast inventories. The citizens of bedroom communities are dependent on the jobs they have in the city.

The city is still the heart and soul of the whole area. There is the stock exchange and the food market.

Do you have a rare disease? Go to a specialist at one of the big in-town hospitals.

The local civic symphony is good but there is only one Boston Symphony. The Boston Public Library has books not found in any town library.

Want to see topflight plays? Want to buy a different wedding gown? How about an exotic meal? Looking for a special cloud filter for your camera? Need a bigger cage for your parakeet? Go downtown.

The center of the city is where services are exchanged—and ideas. . . .

Here in the downtown area are the offices of men who control international companies. In the city they can get the specialized help they need. Engineers, lawyers, public relations men, psychologists, designers, management experts, accountants are all within walking distance.

In the city you can study to be a ballerina or a television repair man, a civil engineer or a merchandise manager, a minister or a milling machine operator.

There are hospitals for your pets, repair shops for the rare Chinese vase you dropped. A Museum of Science, a great research laboratory, a radio station. Here are the warehouses filled with the products from around the world by ship, plane, train, and truck.

There is no way to catalog the city. It is the place which attracts alcoholics and saints, business tycoons and scholars, surgeons and shoppers. It is slums and neon, roof ballrooms and cathedrals, parks and alleys, bargain basements and rare book stores.

Its enormous confusion, its variety of interests, its mobs of people with each individual different—there is its importance. For in the city each man has a hundred choices.

He can choose careers, ideas, products, services, food, friends to his own individual desire. The city, often hated and often feared, is still the product of man's progress. The city is still the place where the individual can share his knowledge, skill, produce, and dreams with his fellow man. As the suburbs grow in size, so does the city grow in importance.

Wide World Photo

this could happen in your town

THIS CITY STREET CAVED IN when a water main broke. It's a dramatic, but not an unusual example of what water does to road bedding.

Protect your roads and pipes from the problems of leakage by Centrilining. This patented process thoroughly cleans and centrifugally lines pipes with cement mortar. Leakage, tuberculation and interior corrosion are permanently checked . . . carrying capacity and distribution pressure are increased to "better than new" highs. And the whole process is done with pipes in place . . . no excavation . . . no traffic disruption.

With Centrilining you can save your water mains . . . and streets too.

Write today for free booklet

CEMENT-MORTAR LININGS FOR PIPES IN PLACE

3,000,000 FEET OF EXPERIENCE

CENTRILINE CORPORATION

A subsidiary of Raymond Concrete Pile Co.

140 CEDAR STREET, NEW YORK 6, N. Y.

Branch Offices in Principal Cities of United States and Latin America

Austin-Western

Model "40"

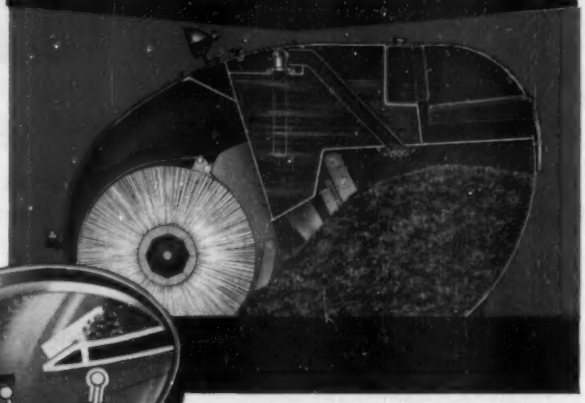
...the motor sweeper with ALL the features needed for a COMPLETE sweep, including

It does the work of a full-length conveyor at a fraction of the cost.

There is no expensive conveyor or elevator in the Model "40"—no complicated, troublesome mechanism to repair and maintain. The rear broom picks up the material on the street and retains it until it passes over the Deflector Bar which is adjusted to just touch the ends of the broom fibre.

From spray bar to rear broom, the Model "40" is engineered for efficient, low cost, trouble free performance. A catalog which tells the whole story is yours for the asking... from us or your nearby A-W distributor.

Here's the "Inside" story



All street dirt—including bricks, bottles, cans and sticks—passes between the exclusive, patented Deflector Bar and the broom, then is "flicked" forcibly into the forward end of the hopper in a steady stream.

Austin-Western

Power Graders · Motor Sweepers
Road Rollers · Hydraulic Cranes

Construction Equipment Division

Manufactured by
AUSTIN-WESTERN COMPANY
Subsidiary of Baldwin-Lima-Hamilton Corporation
AURORA, ILLINOIS, U.S.A.

Zoning and Planning Notes

Edited by NORMAN WILLIAMS, Jr.

Community Facilities in Apartment Zones—Incomplete Listing of Uses

NEW YORK. *Hoffman* v. *Board of Appeals of City of Rochester*, 125 New York Supplement (2d) 222 (Appellate Division, September 30, 1953).

ILLINOIS. *City of Chicago* v. *Sacks*, 115 North Eastern (2d) 762 (Supreme Court November 18, 1953).

In the Rochester case, in a memorandum opinion, the Court held that a home for the aged was a permitted use in an apartment zone. Apparently homes for the aged were not listed specifically as permitted uses in any district, and the Court held that this "leads to the conclusion that it must have been the intention of the legislative body of the City that a building such as here proposed be included within the classification of apartment houses."

In the Illinois case, the Chicago zoning ordinance permitted both grade and high schools in the apartment district, along with a number of other residential and community-facility uses. Nursery schools were not mentioned anywhere in the ordinance. Since the listing of uses in the Chicago ordinance is permissive and quite specific, the Court held that nursery schools were not permitted by implication in this or in other districts. However, the Court then held that exclusion of nursery schools, in any district permitting grade schools and the other uses here included, was an arbitrary discrimination and so unconstitutional.

"Under this ordinance defendant's property might be used for a grade school, high school, boarding school, vocational school, college, or university. We fail to see how a pre-kindergarten or nursery school is more detrimental to public health, safety or welfare than is a grade school, for example; or, indeed how it can be considered objectionable at all in an apartment-house district. In any event, the possibility of noise and disturbance, suggested in plaintiff's brief, would be equally present in the operation of other schools permitted by the ordinance, and cannot afford any basis for a difference of treatment."

Accessory Use—Store within Apartment Building

ILLINOIS. *Kushner* v. *Lawton*, 115 North Eastern (2d) 581 (Appellate Division, October 26, 1953).

A huge new apartment building on the Lake Shore Drive was the largest in Chicago; and it was proposed to lease an area on the ground floor for a food shop. Sales would be limited to tenants, and there would be no physical evidence of the store on the outside of the building. The building was located 4½ blocks from the nearest retail shopping area. It appeared from the evidence that some other apartment buildings, although considerably less than the majority, contained similar small food stores. In these circumstances, the Court held that such a food store would be permitted as an accessory use in this situation.

"The need of a food shop in an apartment building housing almost 2,000 tenants, more than four blocks from a shopping district, would appear to be an absolute necessity as well as something 'customarily incidental and accessory to the permitted use' of the land area. The shop, being confined to the interior of the building, with neither windows, doors nor advertising on the street and with patronage limited almost exclusively to the tenants of the building, cannot be injurious to the district from a health, moral or aesthetic standpoint."

The emphasis on the need of stores near all residences is particularly worth noting in the above language.

Density Control—Exceptions

MICHIGAN. *Mitchell* v. *Grewal*, 61 North Western (2d) 3 Supreme Court, November 27, 1953.

Two identical three-story apartment buildings in Detroit, containing a total of 64 apartments, were planned for conversion to a total of 154 smaller apartments, in violation of the requirements for side yards and lot area per room. The Board of Appeals finally authorized conversion of each building into 66 apartments provided that certain off-street parking places were also provided; and the Court held that the Board had acted within its powers in so doing. The opinion also noted that, under this special "exception" procedure, no finding of hardship was necessary.

Bulk Regulations—Special Treatment for Existing Narrow Lots

IOWA. *Gannett* v. *Cook*, 61 North Western (2d) 703 (Supreme Court, December 15, 1953).

MASSACHUSETTS. *Vetter* v. *Zoning Board of Appeal of Attleboro*, 116 North Eastern (2d) 277 (Supreme Judicial Court, December 9, 1953).

In the Iowa case, a county zoning law contained various restrictions on the area and width of lots, but provided an exception for "any lot of record" at the time of the passage of the ordinance. The enabling act provided that consent of a majority of nearby property owners was a prerequisite to the legal effectiveness of a zoning ordinance. It appeared that 10 minutes after a proposed subdivision plat was filed for record, another document was filed setting forth the approval of the required per cent of property owners in the vicinity. In the opinion, the Iowa Court held that a distinction should be made between a deed and a plat in deciding what is a "lot of record." It was thus held that filing of the plat alone did not create new "lots of record." The Court emphasized the definition of a lot set forth in the zoning ordinance.

The Attleboro zoning ordinance required that new dwellings in single-family districts should be on a lot of at least 12,000 square feet, but that a smaller lot existing before passage of the ordinance could be used—provided that, at the effective date, such smaller lot "does not adjoin other land of the same owner available for use in connection with said lot." In this case, plaintiff owned two parcels, each recorded as a separate lot on the tax books. Each of these lots was slightly over 6,000 square feet, and each was acquired at different times from different sources. One contained a house and garage, and the other a garage only. After selling off the lot with the house, the plaintiff applied for a permit to build another house on the other tax lot. The question was simply one as to whether, under the ordinance, a "lot" coincided with a tax lot, or with the contiguous area held in single ownership. The Court held squarely that, for the purpose of administering the lot size requirement, the plaintiff's lot included the full 12,000 square feet, and that therefore he could not subdivide this lot and build another house on part of it.

Density Regulation

COLORADO. *Di Salle* v. *Giggal*, 261 Pacific (2d) 499 (Supreme Court, Sept. 14, 1953).

Under the relevant County zoning regulations, a tract located in an A-1 Farm Residence District was restricted to five family units, or one family unit per half-acre of area and 75 feet of frontage. During the war, nine family units were constructed without a permit, and were permitted to continue during the war emergency, subject to an agreement to reduce the units to five later on. When the zoning authorities sought an injunction to enforce compliance, defendant argued that the restrictions on density of population were void and unenforceable.

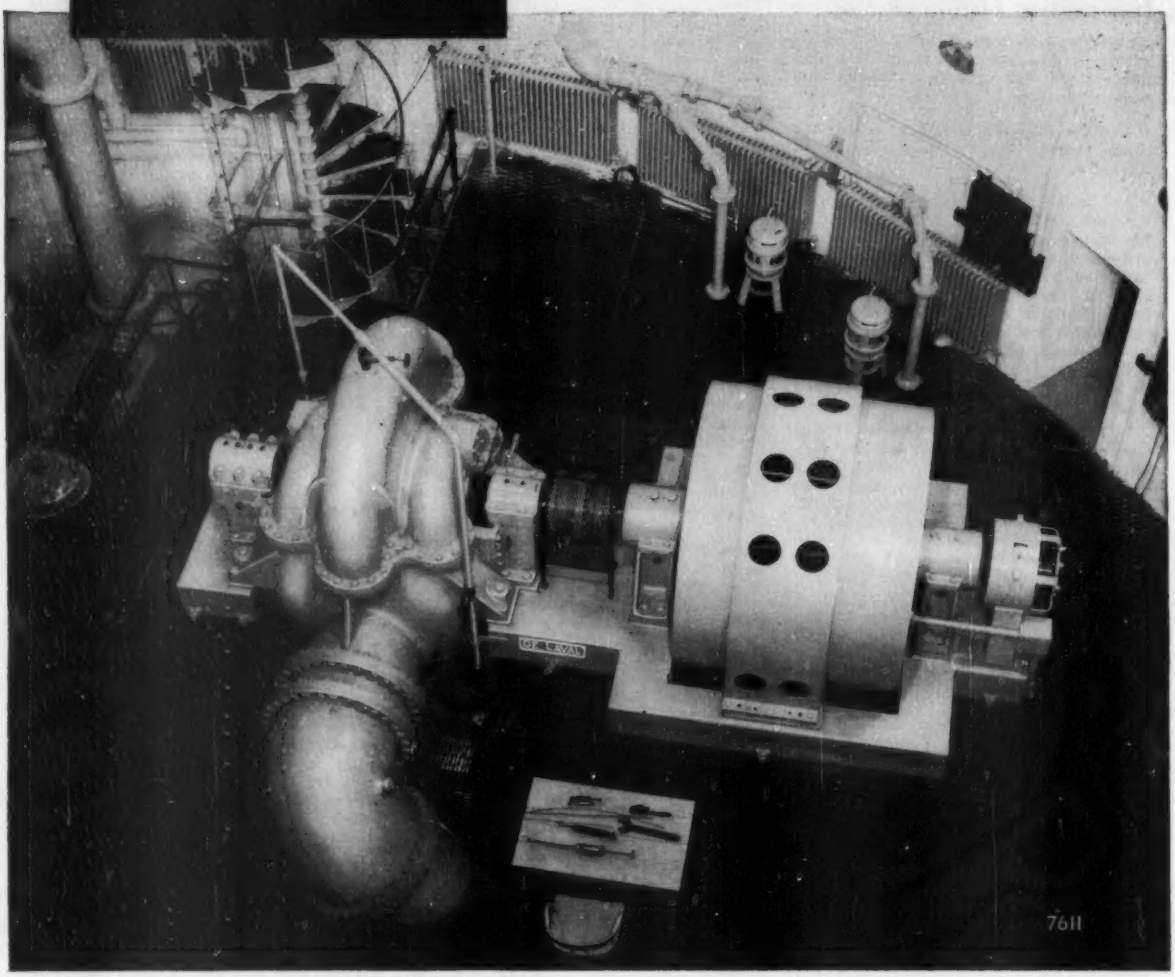
As the Court pointed out, the Enabling Act specifically authorized counties to regulate both "the density and distribution of population" by zoning; and regulation of the size and height of buildings and of coverage, yards and courts, etc., was held necessarily to do so. The Court also indicated that the regulation of the density of distribution of population was a "principal purpose" of zoning regulations, and that

> . . . the regulation of the number of families to a given lot area is of vital importance to the orderly development of a rapidly growing territory adjoining a city, particularly for reasons of sanitation therein.

The opinion also clarified confusion resulting from a loosely written cross reference to "R Districts."

THIS MAGAZINE IS NOT COPYRIGHTED
Readers may quote freely from any article not indicated as copyrighted by the author, provided that proper credit is given.

DE LAVAL CENTRIFUGAL PUMPS *help Louisville meet increased water demand*



This 60 mgd, 200 foot head centrifugal pump is one of a group of De Laval units that help meet Louisville's expanding water needs. Today, this growing community is served by De Laval pumps with a total capacity of 314 million gallons per day.

Progressive Louisville, like 80% of America's largest cities, depends on De Laval to meet its ever-increasing pumping demands efficiently and economically for years to come. Such proven dependability is the result of over 50 years experience in pump building, during which time De Laval has introduced numerous "firsts" in pump design.

De Laval Centrifugal Pumps are available in capacities ranging from 100 thousand gallons per day to more than 100 million gallons per day . . . all built for long, dependable service.

See us IN BOOTH 58 at the show in Seattle

DE LAVAL *Centrifugal Pumps*

DE LAVAL STEAM TURBINE COMPANY

866 Nottingham Way, Trenton 2, New Jersey

DL 212

Legal Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS
Charles S. Rhyne, General Counsel

Air Conditioning—Home Unit—Not Nuisance Nor Violation of Noise Ordinance

In action against defendant for maintenance of public nuisance, held that defendant in projecting from window of his home an air-conditioning unit of standard size and type, in proper working order, and from which eminated during day and night a sound which was similar in intensity and character to that commonly made by home air-conditioners, did not violate either New York City Code prohibiting unnecessary noise or Penal Law relating to public nuisance. *People on Complaint of Gershberg* v. *Arkow*, 124 N. Y. Supp. (2d) 704 (N. Y. Misc. Rep., July 30, 1953).

Barmaids—Ordinance Limiting to Relative of Owner Upheld—Statute

In action to restrain enforcement of municipal ordinance prohibiting women, other than licensees or the mother, daughter, wife, or sister of a licensee from being employed as bartenders, held that ordinance, as authorized by provision of Liquor Control Act, was proper exercise of police power. *Henson* v. *City of Chicago*, 114 N. E. (2d) 778 (Ill., Sept. 24, 1953).

Baseball Park—City Not Liable to Softball Player for Injuries

In action against city by softball player injured on city-owned softball diamond when his cleat caught on a piece of wire protruding from ground, held that diamond was not a "place of employment" nor "public building" within safe place statute and that city was engaged in governmental function and not liable on theory of negligence or nuisance. *Hoepner* v. *City of Eau Claire*, 60 N. W. (2d) 392 (Wis., Oct. 6, 1953).

Building Permits—Delay and Loss of Plans—Cause of Action Against Inspector—City Immune

In action against city and its building inspector for damages for alleged negligence and fraudulent delay in issuing building permits and for loss of plans submitted by plaintiff with application, held that complaint stated cause of action against inspector, but that city was immune from liability for negligence of its building inspector. *Carr* v. *City of Anchorage*, 114 Fed. Supp. 439 (U. S. D. C., Alaska, Sept. 16, 1953).

Communist Investigation—Discharge Of Policeman for False Answers on His Party Association Upheld

On review of New York City police commissioner's action in dismissing petitioner from police department on basis of false answers given by petitioner in course of official investigation as to association with Communist party, held that false answers intending to mislead petitioner's superior constituted misconduct justifying dismissal. *Rubenstein* v. *Monaghan*, 124 N. Y. S. (2d) 76 (N. Y. Sup., Aug. 11, 1953).

Competitive Bidding—Granting to Other Than Lowest Bidder Upheld

In action by taxpayer to enjoin execution of proposed contract with bidder for generating unit for power plant, held that municipality, in selecting lowest responsible bidder on public contract, is allowed to exercise reasonable discretion and may select one other than lowest bidder where as here choice was based on quality, suitability, and adaptability of article for use for which intended. *Duffy* v. *Village of Princeton*, 60 N. W. (2d) 27 (Minn., July 10, 1953).

Explosion, Gas—Sparks from City Steam Roller—City Liable

In action against city by operator of steam roller for injuries received when sparks from the roller ignited escaping gas in torn-up part of steet, held that evidence sustained verdict for plaintiff. *City of Memphis* v. *Uselton*, 260 S. W. (2d) 293 (Tenn. App., Feb. 18, 1953). *Writ den. by Sup. Ct.*, June 5, 1953.

Fire Department—Volunteer—Both Department and Member Immune From Liability—Statute

In action against fire department and firemen individually for damages for injuries resulting from collision with department's vehicle, held that under statute both volunteer fire department and individual members performing duties therefor were immune from tort liability. *Heifetz* v. *Rockaway Point Volunteer Fire Department*, 124 N. Y. S. (2d) 257 (N. Y. Misc. Rep., June 4, 1953).

Garbage—Limiting Collections from Commercial Buildings Invalid

In action to have ordinance limiting city collection of garbage and other refuse to two containers from commercial, office, and industrial buildings declared unconstitutional since no such limitation was imposed on residences and apartments, held that ordinance was invalid because limitation of two containers from "premises" of office and other buildings was too indefinite and vague. *Leroy Franz, Inc.* v. *City of New Rochelle*, 124 N. Y. S. (2d) 525 (N. Y. Misc. Rep., Aug. 24, 1953).

Obscene Books—Ordinance Constitutional But Chief of Police Enjoined from Threatening Distributors

In action against city and chief of police to enjoin enforcement of ordinance prohibiting sale or distribution of obscene or immoral books, and to enjoin chief of police from making threats of arrest and prosecution of distributors violating ordinance, held that ordinance was not unconstitutional as violation of freedom of press and its enforcement would not be enjoined, but that chief of police would be enjoined since his conduct was in excess of powers granted to him under ordinance, and deprived publisher of property rights without due process of law. *New American Library of World Literature, Inc.*, v. *Allen et al.*, 114 F. Supp. 823 (U. S. D. C., N. D. Ohio, E. D., Aug. 5, 1953).

Off-Street Parking Bonds—Payments From Revenues—Taxpayers Not Entitled to Injunction

In action of taxpayers to enjoin issuance by city of self-liquidating revenue bonds for acquisition of off-street automobile parking facilities, held, that, where it was clear that expense of maintaining system and payment of bonds would come exclusively from revenues of the system, taxpayers did not have such interest as to entitle them to maintain suit. *Menendez* v. *City of Detroit*, 60 N. W. (2d) 319 (Mich., Oct. 5, 1953).

Off-Street Parking Lots—New York City May Acquire and Operate—Public Purpose—Statute

In action to enjoin New York City from engaging in auto-parking business, held that city was clearly within General Municipal Law declaring the existence of serious traffic congestion due to acute shortage of parking and garage facilities and declaring the establishment of said facilities by municipalities to be a public purpose, and, therefore, temporary injunction would be denied. *Acme Realty Co., Inc.*, v. *Impellitteri, Mayor*, 124 N. Y. S. (2d) 283 (N. Y., Sup. Ct., N. Y. City, Aug. 4, 1953).

Policemen—Judgment Against for Gun Shot Wounds—Statute Making City Liable For

In action against city and policemen for injuries inflicted by discharge of shotgun by defendant policeman, held, in reversing judgment dismissing complaint as to city, that city policeman was a "public officer" within meaning of statute providing that, except in action for false arrest, judgment as to damages and costs entered against public officer shall be paid by state or political subdivision of which he is an officer. *Matczak* v. *Mathews et al.*, 60 N. W. (2d) 352 (Wis., Oct. 6, 1953).

Substandard Building—Ordinance and Order for Demolition Valid

In action to enjoin city from enforcing order for removal and demolition of plaintiff's building on grounds it was substandard, and deteriorated over 50%, and so dilapidated as to be beyond repair, held, in dismissing action, that ordinance was valid exercise of police power and order was not arbitrary or an abuse of discretion. *Soderfelt* v. *City of Drayton*, 59 N. W. (2d) 502 (N. D., June 20, 1953). *Reh. den.* July 22, 1953.

Trailer Camps—Ordinance Limiting Time, Requiring Inspection and Keeping of Register Valid

In action for injunction and declaratory judgment to invalidate trailer-camp ordinance limiting time trailer may be parked in camp, and requiring daily inspection of camp, and keeping of duplicate registration book, held that municipal ordinance was valid exercise of police power and is not in conflict with state law regulating trailer camps. *Stary* v. *City of Brooklyn*, 114 N. E. (2d) 633 (Ohio Ct. of Common Pleas, Cuyohoga Cty.).

GETTING ON-THE-JOB EARLIER... IN ALL KINDS OF WEATHER SAVES TIME AND MONEY

High Flotation Lets You Start Your Spring Jobs Early — In-spite-of bad weather!

It's just good dollar sense! Get on the job earlier and work in poor underfoot conditions and you add 30 to 60 working days to your year!

The low ground-bearing pressure of the New Schield Bantam C-35 Crawler makes this possible. Here's a husky, rugged rig that turns in bigger machine results weeks before heavy, more cumbersome rigs can operate on restricted load limit highways.

Available with 9 fast-change front-end attachments, the famous job-proved Bantam is available in a wide variety of mounts tailored to your needs.

Write the Schield Bantam Co., 234 Park St., Waverly, Iowa, TODAY. Ask for free literature or a FREE on-your-job demonstration.

Here's a Bantam C-35 Crawler (⅜ cu. yd.) working in soupy mud in Rahway, N. J. Crawler gets on the job — does its work — gets out with ease. Independent swing and travel speeds digging operation without stopping forward movement.

Front-end fitted as a crane, this Bantam Crawler proves its worth for lifting jobs. 94" overall width allows highway travel without permits. Low ground bearing pressure (only 2½ psi with 32" tread) allows safe travel on normal pavement. Lifting capacity — 5 tons.

— Advertisement

VERSATILE SCHIELD Bantam DOES MANY LARGE MACHINE JOBS AT SMALL COST

NOW — when budgets require more efficient handling of men and equipment, to make both ends meet, the Bantam is the rig you can't afford *not* to own! The Bantam costs less to buy — costs less to operate — does countless jobs the money-saving Bantam Way . . . offering you many features of big machines, yet providing an all-around excavator that moves from job-to-job with the speed of a truck.

Traffic keeps rolling while Bantam replaces water main in downtown Milwaukee. Crane with clamshell quickly removes old pipe — places new section — refills holes. Maneuvers easily among wires, poles and buildings, without slowing traffic.

Here's the T-35 Bantam with crane, mounted on the new Schield Bantam specially designed Crane Carrier . . . the ideal mount with a 16½' turning radius . . . all new!

Just check a few of these jobs — see for yourself how a Bantam fits your budget requirements.

EXCAVATING: Bantam enables you to handle your own street repairs . . . make sanitary and storm sewer installations and handle spot repairs on existing lines.

MATERIALS HANDLING: Sand and gravel loading and unloading comes natural to a Bantam. Sanitary landfills, maintenance yard material handling, building of water purification systems and sewage bed cleaning — all become 1-man Bantam jobs.

The Schield Bantam is engineered to perform a wide range of work with a host of outstanding features normally found on larger, more expensive rigs. There's a Bantam mounting that suits your particular needs — exactly. There's a crawler for use in mucky and wet conditions. There's a crane carrier for all-new, heavy duty mobile mounting. There's a dependable factory re-built 6 x 6 — and a Bantam can be mounted on your own city truck. Ask for a FREE demonstration — on-your-job! Write for Free descriptive literature — TODAY!

SB - TMCL - 1

World's Largest Producers of Trucks-Cranes and Excavators

SCHIELD Bantam®

Company, 234 Park St., Waverly, Iowa, U.S.A.

YOUR HEADQUARTERS FOR SCHIELD BANTAM SALES AND SERVICE

Recent City Manager Appointments

The following portraits are of city managers whose appointments have been announced in preceding issues of *The American City*

Donald H. Blatt
Newburgh, N. Y.

Maurice Marcotte
Dorval, Quebec

J. M. Orman
Midland, Texas

Robert F. Mott
Delaware, Ohio

Edward T. Beall
Montgomery Co., Md.

Rockland, Maine, appointed LLOYD K. ALLEN, the former manager of Old Town, Maine, to succeed F. D. Farnsworth, who has retired, as city manager.

FREDERICK W. BROOKS, former assistant city engineer, succeeded B. H. Cruce as city manager of Pampa, Texas.

Flint, Mich., has appointed the former fire marshal, HAROLD CHIRGWIN as city manager, succeeding Herman Young.

Succeeding R. H. Burton, Jr., as city manager of Tappahannock, Va., is DAVID S. CLARK, former high-school instructor.

B. H. CRUCE left the managership at Pampa, Texas, to succeed Ray Case as city manager of Greeley, Colo.

R. E. FRONEBERGER, former manager of Greenwood, S. C., was appointed city manager of Spartanburg, S. C., succeeding F. A. Jacocks.

Marinette, Wis., has appointed KENNARD W. GARDINER, former manager of Vinton, Iowa, to succeed Robert L. Price as city manager.

C. A. HARRELL, former manager of San Antonio, Texas, has succeeded W. R. Kellog as city manager of Cincinnati, Ohio.

Succeeding Ralph E. Oliver as city manager of Ukiah, Calif., is CHARLES A. KEENE.

WILLIAM E. LAWSON left the managership of Buena Vista, Va., to succeed Robert A. Lovelace as city manager of Delray Beach, Fla.

Portsmouth, Ohio, has appointed ROBERT E. LAYTON, former manager of Danvers, Mass., as city manager, succeeding Edward T. Beall.

LOWELL LONG, former assistant manager at University City, Mo., was appointed city manager of Columbia, Tenn., succeeding Cecil D. Eskew.

Vinton, Iowa, has appointed its city clerk, F. J. LYNCH, as city manager succeeding K. W. Gardiner.

FREEMAN E. MCNUTT left the managership of Cedar City, Utah, to succeed Raymond F. O'Hara as city manager of Delano, Calif.

The first manager of Fridley, Minn., is ERNEST MADSEN, the former deputy village clerk.

Elmwood Park, Ill., has appointed HOWARD A. OLSON, formerly village trustee, as its first city manager.

J. M. ORMAN, formerly public works director, was appointed city manager of Midland, Texas, to succeed W. H. Oswalt.

Succeeding Clarence Deem as city manager of Dormount, Pa., is ROY G. A. PETTERSON, formerly an attorney-at-law.

Harper Woods, Mich., has appointed the water-department director, HARRY C. SEITZ, as city manager succeeding W. T. Williamson.

RICHARD G. SIMMONS, formerly administrative assistant at Eau Gallie, Fla., was appointed city manager of Melbourne, Fla., to succeed C. R. Stickel.

The first city manager of Lathrup Village, Mich., is LEONARD WATCHOWSKI, formerly treasurer-assessor of Hazel Park, Mich.

CLARENCE E. RIDLEY
Executive Director
International City Managers' Association

REPRESENTATIVE MUNICIPAL BOND ISSUES

March 1 to March 12, 1954

Date of Sale			*Purpose*	*Average Maturity (Years)*	*Net Interest Cost Per Cent*
3- 1-54	Marple Turnpike, Pa.	$ 180,000	General Obligation	10½	2.24
3- 2-54	Auburn, N. Y.	605,500	Public Improvement and Apparatus	9¼	1.681
3- 2-54	Morganton, N. C.	400,000	Electric Light and Power Bond Anticipation Notes	2½	1.22
3- 2-54	Cleveland, Miss.	27,000	Water Works and Sewerage Ext.	5	2.23
3- 2-54	Indianapolis, Ind.	1,000,000	Weir Cook Municipal Airport Expansion, 1954	11½	1.746
3- 3-54	Grundy Center, Iowa	18,000	Sewer Improvement	5¼	3.931
3- 4-54	Sodus, N. Y.	300,000	Water	15¾	2.46
3- 5-54	Essex, Conn.	750,000	School	10	1.951
3- 3-54	Athens Co., Ohio	200,000	Children's Home	10¾	2.35
3- 8-54	Wayne, Ohio	30,000	General Obligation	11	2.72
3- 8-54	Narberth, Pa.	25,000	Equipment and Improvement	3½	1.27
3- 9-54	Harriman, Tenn.	167,000 233,000	Street Improvement	5½ 14½	3.167
3- 9-54	Speedway, Ind.	975,000	Sewage Works Revenue	19½	3.4577
3- 9-54	Fayette Co., Iowa	86,000	County Home	9½	1.75
3- 9-54	Smithtown, N. Y.	55,000	Improvement	4	1.86
3-10-54	Cranston, R. I.	500,000 650,000	School, Act of 1949, Series D Highway, Act of 1950	13 12⅔	2.519 2.519

COMPILED from THE DAILY BOND BUYER

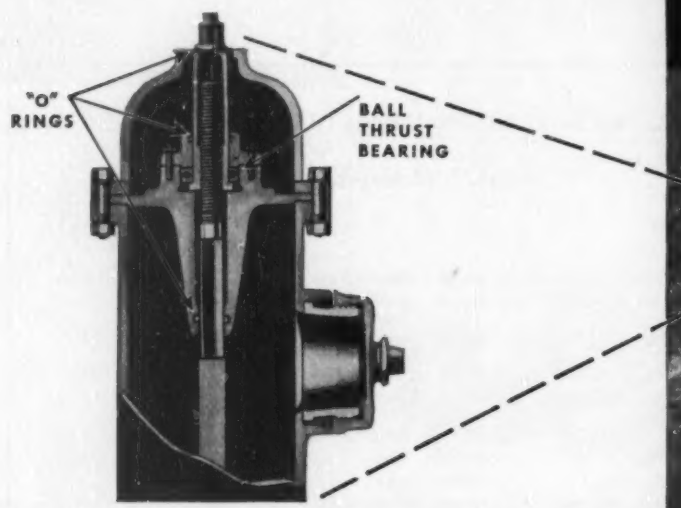
In Cuyahoga Falls...

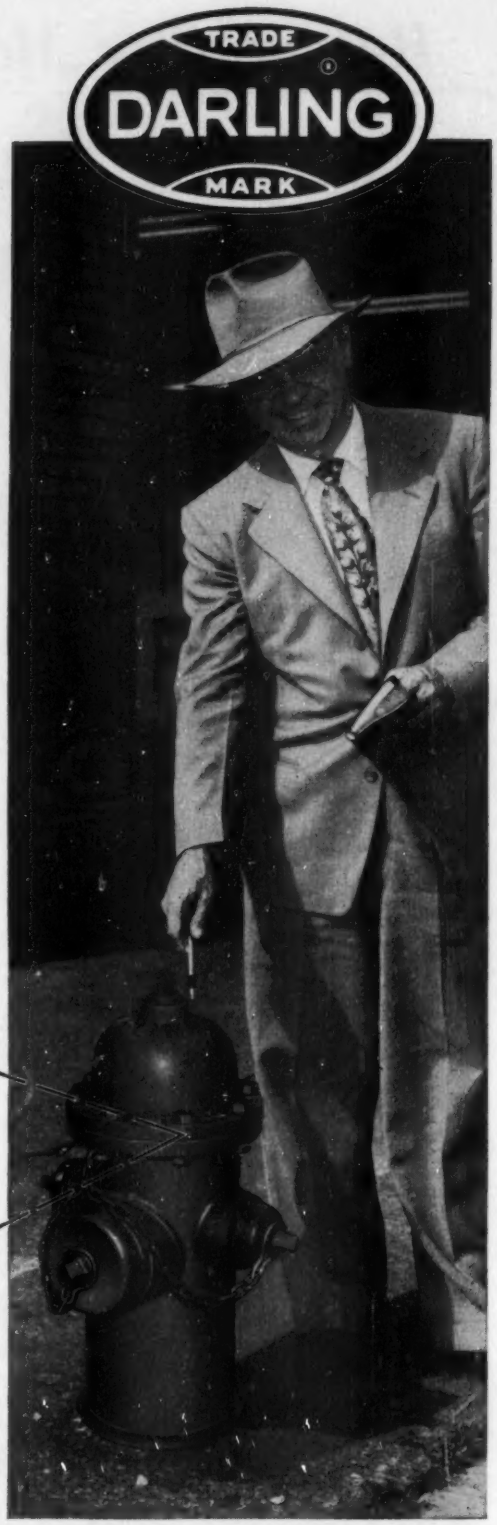
Darling hydrants for 45 years ...now DARLING B-50-B's are going in!

EASIER maintenance and rugged construction . . . basic design advantages of Darling hydrants and valves . . . have been paying off in Cuyahoga Falls, Ohio, since way back in 1908. In the words of City Engineer T. H. Sauter, "The City of Cuyahoga Falls has been a user of Darling hydrants and valves since 1908. The ease with which repairs can be effected has been a factor in the determination of the city to standardize on this type of equipment."

Darling B-50-B's Bring Unique, New Advantages!

Cuyahoga Falls, and hundreds of other cities too, are now installing the new Darling B-50-B hydrants. This dry-top, ball-bearing hydrant opens quicker, operates easier, and eliminates bothersome packing lubrication. Moreover, the special Darling B-50-B "O" rings are insurance against loss of lubricant for threads and bearings . . . *and never let a drop of water reach the operating threads.*



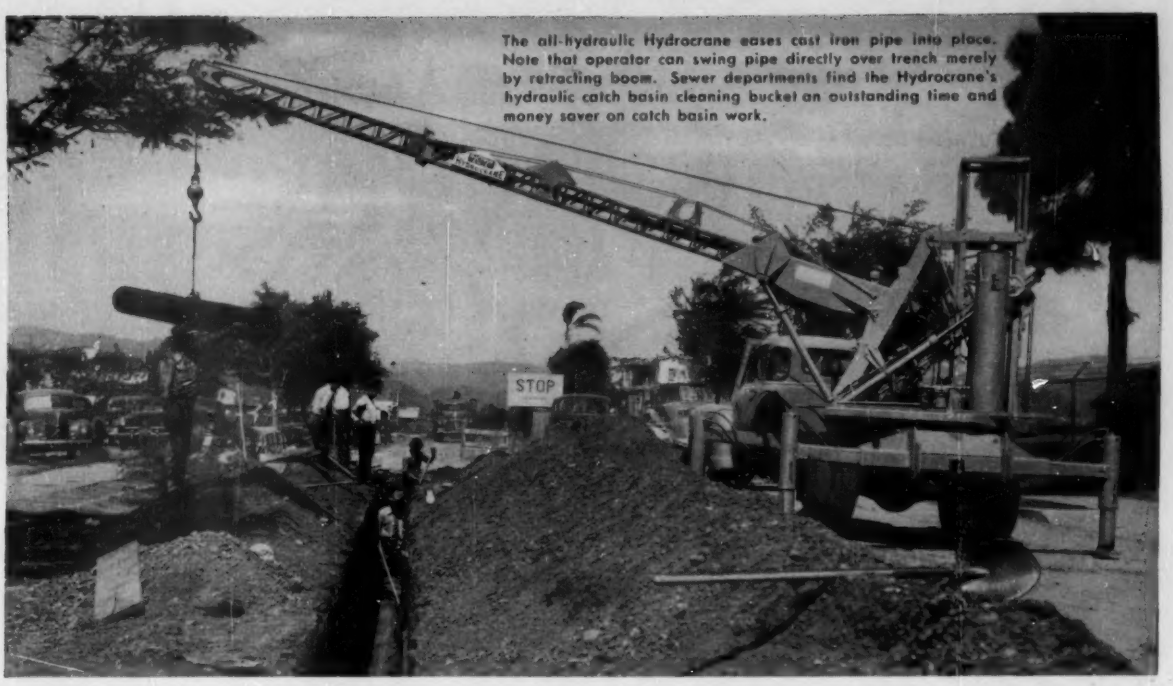


Before you decide on any hydrant or valve, get all the facts on the new Darling B-50-B hydrant and Darling water valves for every service. *Write today!*

DARLING VALVE & MANUFACTURING CO.

WILLIAMSPORT 10, PA.

Manufactured in Canada by The Canada Valve & Hydrant Co., Ltd., Brantford 7, Ontario



The all-hydraulic Hydrocrane eases cast iron pipe into place. Note that operator can swing pipe directly over trench merely by retracting boom. Sewer departments find the Hydrocrane's hydraulic catch basin cleaning bucket an outstanding time and money saver on catch basin work.

HYDROCRANE'S built-in reach cuts down the "extra-cost" jobs

Bucyrus-Erie's ⅜-yd. Hydrocrane with hydraulically telescoping boom gives you 8 ft. more boom — right at your fingertips. This special extend-retract action means substantial savings on ordinary jobs . . . outstanding savings on the tough extra-cost jobs outfits with ordinary booms can't handle. Look:

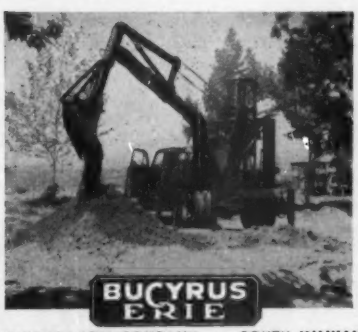
1. *On sewer and water pipe laying, hydrant and valve setting,* the Hydrocrane reaches under branches and low overpasses, between buildings, into alleyways — eases units into place quickly, easily.
2. *On excavating work,* the Hydrocrane digs trenches and manholes, uncovers pipe leaks, handles dozens of digging jobs — often *by reaching out* while the crane itself stays out of the way of traffic.
3. *On yard work* reaches into box cars . . . over fences . . . between stockpiles to move material, load trucks — in a hurry.

quick convertibility to *HYDROHOE*

By actual stop-watch test, crane has been converted to dragshovel front end by one man in *less than one hour!* And on trenching, telescoping action of Hydrohoe boom cuts lost time moving up by as much as 40 percent.

Get the full story on the all-hydraulic Hydrocrane with its many attachments.

SEND COUPON TODAY...



Trench cut is started with the Hydrohoe. Available with either 12- or 18-inch dipper — equipped with hydraulic ejector that kicks dirt out.

BUCYRUS-ERIE COMPANY • SOUTH MILWAUKEE, WISCONSIN

BUCYRUS-ERIE COMPANY
South Milwaukee, Wisconsin

Gentlemen: ☐ Please send me Hydrocrane literature.
☐ Please send me Hydrohoe literature.

Name.....

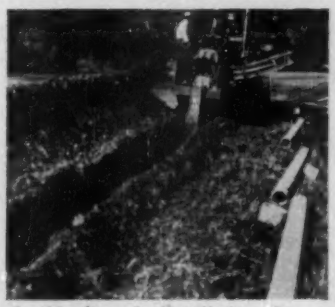
Title.....

Address.....

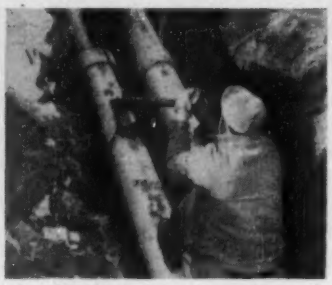
City..... State.....

15H53

Save time and money on water line installation



In this Georgia installation, faster line assembly permitted following the digger closely.



On this Utah job, snow, ice and frozen ground caused no installation slow-down.

In this California installation, flexible Ring-Tite joints permitted conformance to curves.

Transite® Pressure Pipe with the new Ring-Tite® Coupling

Goes together fast! Locks tight automatically!

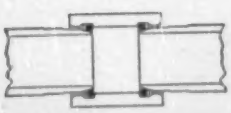
In state after state, community after community, water district after water district, Transite Pressure Pipe and the new Ring-Tite Coupling have made possible important cost-savings in installation time.

The Ring-Tite Coupling is effecting installation savings everywhere because of its special features. To begin with, pipes are aligned quickly, easily. Coupling design not only provides automatic aligning but also automatic adjustment for expansion. Rubber rings are simply popped into grooves for assembly; lubricated pipe ends then slide in under rings smoothly, easily, and surely.

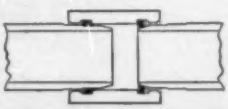
Pipe ends are automatically separated within the coupling. This separation gives the line flexibility to withstand shock and vibration, relieves line stresses, permits conformance to curves.

Like Transite Pressure Pipe, the Ring-Tite Coupling sleeve is made of asbestos and cement . . . it is strong and durable, cannot rust, and is highly resistant to corrosion. Installations can be completed under adverse weather, temperature or terrain conditions. No complicated equipment is required.

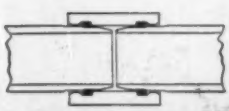
For more information write Johns-Manville, Box 60, New York 16, N. Y.



A. Rubber rings popped into grooves before assembly.



B. Lubricated pipe slides in under rubber rings.



C. Both pipes in assembled position. Rings compressed and locked in place.

JOHNS-MANVILLE JM PRODUCTS

Johns-Manville TRANSITE PRESSURE PIPE

AN ASBESTOS-CEMENT PRODUCT

Conventions—When and Where

Conventions listed this month for the first time are indicated by an asterisk (*)

April 12-14—Toronto, Ontario
AMERICAN WATER WORKS ASSOCIATION—Canadian Section. Annual Meeting (Royal York Hotel). Sec., A. E. Berry, Director Ontario Department of Health, Parliament Bldgs., Toronto 8, Ont.

April 19-22—Lafayette, Ind.
PURDUE ROAD SCHOOL. (Purdue University). Exec. Sec., Ben H. Petty, Professor of Highway Engineering, CE Bldg., Purdue University, Lafayette, Ind.

April 22-23—Lincoln, Nebr.
AMERICAN WATER WORKS ASSOCIATION—Nebraska Section. Annual meeting (Cornhusker Hotel). Sec.-Treas., E. Bruce Meier, 201 Mechanic Arts, University of Nebraska, Lincoln, Nebr.

April 22-23—Watertown, N. Y.
AMERICAN WATER WORKS ASSOCIATION—New York Section. Annual Meeting (Woodruff Hotel). Sec., Kimball Blanchard, Room 1922, 50 W. 50th St., New York 20, N. Y.

April 22-24—Tucson, Ariz.
ARIZONA SEWAGE AND WATER WORKS ASSOCIATION. Annual Meeting (Santa Rita Hotel). Exec. Sec., M. V. Ellis, Supervisor Sewage Treatment Plant, Phoenix, Ariz.

April 23-24—Bozeman, Mont.
AMERICAN WATER WORKS ASSOCIATION—Montana Section. Annual Meeting (Baxter Hotel). Sec., A. W. Clarkson, Assistant Director, Division of Environmental Sanitation, State Board of Health, Helena, Mont.

***April 26-29—St. Louis, Mo.**
RURAL ELECTRIFICATION ADMINISTRATION COOPERATIVE. Annual Electric Generating Plants Operation and Maintenance Conference (Melbourne Hotel). For information address Sec., Harry F. Collins, P. O. Box 186, Pittsfield, Ill.

April 26-29—Washington, D. C.
CHAMBER OF COMMERCE OF THE UNITED STATES. Annual Meeting. Exec. Vice-Pres., Arch N. Booth, 1615 H St. NW., Washington, D. C.

May 3-5—Chattanooga, Tenn.
AIR POLLUTION CONTROL ASSOCIATION. Annual Meeting (Patten Hotel). For information address Robert T. Griebling, 4400 Fifth Ave., Pittsburgh 13, Pa.

May 4-6—Chicago, Ill.
AMERICAN PUBLIC POWER ASSOCIATION. Annual Meeting (Hotel Morrison). Exec. Sec., Alex Radin, 1757 K. St. NW., Washington 6, D. C.

May 4-6—Washington, D. C.
NATIONAL HIGHWAY USERS CONFERENCE. Annual Meeting (Mayflower Hotel). Dir., Arthur C. Butler, 952 National Press Bldg., Washington 4, D. C.

May 5-7—New Orleans, La.
ASSOCIATION OF STATE PLANNING AND DEVELOPING AGENCIES. Annual Meeting. Sec.-Treas., Leslie Hill Prince, 1026 17th St. NW., Washington, D. C.

May 6-8—Gatlinburg, Tenn.
TENNESSEE MUNICIPAL LEAGUE. Annual Meeting (Greystone Hotel). Exec. Sec., Herbert Bingham, 228 Capitol Blvd., Nashville 3, Tenn.

May 9-16—Atlantic City, N. J.
NATIONAL CONFERENCE OF SOCIAL WORK. Annual Meeting (Ritz Carlton and Ambassador Hotels). Exec. Sec., Joe Hoffer, 22 W. Gay St., Columbus, Ohio.

May 10-12—Lafayette, Ind.
INDUSTRIAL WASTE UTILIZATION CONFERENCE. Annual Meeting (Purdue Union Building). Chairman, Don E. Bloodgood, C. E. Bldg., Purdue University, Lafayette, Ind.

***May 16-20—Columbus, Ohio**
AMERICAN PLANNING AND CIVIC ASSOCIATION. National Citizens Conference on Planning (Neil House). Exec. Sec., Harlean James, 901 Union Trust Bldg., 15th and H Sts. NW., Washington, D. C.

May 17-22—Washington, D. C.
NATIONAL FIRE PROTECTION ASSOCIATION. Annual Meeting (Hotel Statler). Sec.-Treas., Hovey T. Freeman, 60 Batterymarch St., Boston 10, Mass.

May 18-21—Detroit, Mich.
NATIONAL INSTITUTE OF MUNICIPAL CLERKS. Annual Meeting (Hotel Statler). Pres., Arthur Shinners, Town Hall, Brookline, Mass.

May 20-21—Boston, Mass.
AMERICAN SHORE AND BEACH PRESERVATION ASSOCIATION. Annual Meeting (Sheraton Plaza Hotel) Sec.-Treas., P. J. Gannon, 1060 Broad St., Newark 2, N. J.

May 23-26—Chicago, Ill.
NATIONAL ASSOCIATION OF PURCHASING AGENTS. Annual Meeting (Conrad Hilton Hotel). Sec., Eugene A. Gump, Purchasing Agent, State of Michigan, Lansing, Mich.

May 23-27—San Francisco, Calif.
MUNICIPAL FINANCE OFFICERS' ASSOCIATION OF THE UNITED STATES AND CANADA. Annual Meeting. Exec. Dir., Joseph F. Clark, 1313 E. 60th St., Chicago, Ill.

May 23-28—Seattle, Wash.
AMERICAN WATER WORKS ASSOCIATION—National group meeting jointly with the Pacific Northwest Section. Annual Conference. Sec., AWWA, Harry E. Jordan, 521 Fifth Ave., New York, N. Y.; Sec.-Treas., Pacific Northwest Section, O. P. Newman, Box 548, Boise, Idaho.

May 24-26—Elmira, N. Y.
EASTERN ASSOCIATION OF FIRE CHIEFS. Annual Meeting (Hotel Mark Twain). Sec., Chief Edwin J. Clark, Box 271, Wayne, Pa.

June 2-4—Sioux Falls, S. D.
LEAGUE OF SOUTH DAKOTA MUNICIPALITIES. Annual Meeting (Cataract Hotel). Exec. Dir., J. G. Barger, City Hall, Aberdeen, S. D.

June 9-12—Moorhead, Minn.
LEAGUE OF MINNESOTA MUNICIPALITIES. Annual Meeting (F-M Hotel). Exec. Sec., C. C. Ludwig, 15 University Library Bldg., Minneapolis 14, Minn.

June 9-12—Omaha, Nebr.
NATIONAL ASSOCIATION OF COUNTY OFFICIALS. Annual Meeting (Fontenelle Hotel). Sec.-Treas., 1616 Eye St. NW., Washington, D. C.

***June 10-12—McCall, Idaho**
IDAHO MUNICIPAL LEAGUE. Annual Convention (Shore Lodge). Sec.-Treas., Robertson Smith, 455 W. Liberty St., Weiser, Idaho.

June 10-12—Spokane, Wash.
ASSOCIATION OF WASHINGTON CITIES. Annual Meeting (Davenport Hotel). Exec. Sec., Chester Biesen, 250 Smith Hall, University of Washington, Seattle 5, Wash.

June 13-16—Chicago, Ill.
NATIONAL ASSOCIATION OF TAX ADMINISTRATORS. Annual Meeting (La Salle Hotel). Exec. Sec., Charles F. Conlon, 1313 E. 60th St., Chicago, Ill.

June 15-19—Boston, Mass.
THE AMERICAN INSTITUTE OF ARCHITECTS. Annual Convention (Hotel Statler). Convention Manager, Arthur B. Holmes, 1735 New York Ave. NW., Washington 6, D. C.

June 16-18—Estes Park, Colo.
COLORADO MUNICIPAL LEAGUE. Annual Meeting (Stanley Hotel). Exec. Dir., Jay Bell, 327 Norlin Library, Boulder, Colo.

June 16-18—Monticello, N. Y.
NEW YORK STATE CONFERENCE OF MAYORS AND OTHER MUNICIPAL OFFICIALS. Annual Meeting (Laurels Country Club). Exec. Sec., Morgan Strong, 6 Elk St., Albany, N. Y.

***June 19-23—Bedford, Pa.**
PENNSYLVANIA STATE ASSOCIATION OF TOWNSHIP COMMISSIONERS. Annual Meeting (Bedford Springs Hotel). Sec.-Treas., H. A. Fritschman, 2325 Darby Road, Havertown, Pa.

June 22—Boonton, N. J.
AMERICAN WATER WORKS ASSOCIATION—New Jersey Section. Summer Outing, Inspection Trip, and Luncheon. For information, address Sec., C. B. Tygert, Box 178, Newark 1, N. J.

June 23-25—Allentown, Pa.
AMERICAN WATER WORKS ASSOCIATION—Pennsylvania Section. Annual Meeting (Americus Hotel). Sec., L. S. Morgan, State Department of Health, Greensburg, Pa.

***June 24-26—Biloxi, Miss.**
MISSISSIPPI MUNICIPAL ASSOCIATION. Annual Meeting (Buena Vista Hotel). Mgr., George Lemon Sugg, P. O. Box 531, Jackson, Miss.

***June 24-26—Richmond, Ind.**
CENTRAL STATES SEWAGE WORKS ASSOCIATION. Annual Meeting (Leland Hotel). Exec. Sec., A. Paul Troemper, Sewage Treatment Plant, Richmond, Ind.

***June 28-30—Boston, Mass.**
AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS. Annual Meeting (Hotel Somerset). Corres. Sec., Bradford Williams, 9 Park St., Boston 8, Mass.

***June 28-30—Pittsburgh, Pa.**
PENNSYLVANIA STATE ASSOCIATION OF BOROUGHS. Annual Meeting (William Penn Hotel). Sec., H. F. Alderfer, Room 281, The Capitol, Harrisburg, Pa.

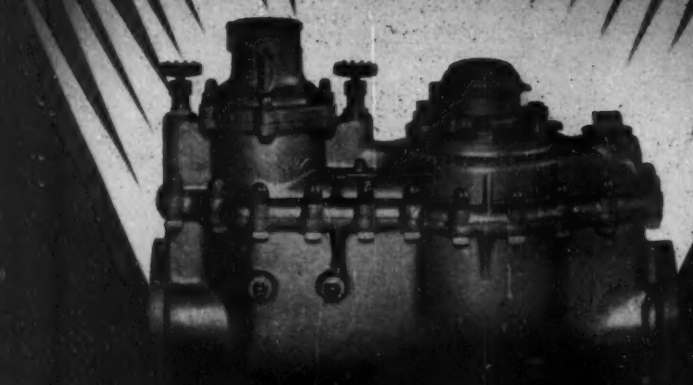
July 21-24—New York, N. Y.
NATIONAL SECRETARIES ASSOCIATION. Annual Meeting (Waldorf-Astoria Hotel). Exec. Sec., Helen J. Boyle, 25 E. 12th St., Kansas City 6E, Mo.

***July 25-31—Sao Paulo, Brazil**
INTERAMERICAN ASSOCIATION OF SANITARY ENGINEERING. Interamerican Conference of Sanitary Engineering (Engineering Institute of Sao Paulo, Polytechnic School of the University of Sao Paulo). For information, address the General Secretariat, IV International Conference of Sanitary Engineering, Caixa Postal 8099, Sao Paulo, Brazil.

***July 26-28—Philadelphia, Pa.**
PENNSYLVANIA CHIEFS OF POLICE ASSOCIATION. Annual Meeting (Benjamin Franklin Hotel). Exec. Dir., Samuel Siegle, 420 State Theatre Bldg., Harrisburg, Pa.

***July 27-29—New York, N. Y.**
NEW YORK STATE ASSOCIATION OF CHIEFS OF POLICE. Annual Convention (Hotel New Yorker). Exec. Sec., R. W. Morris, P. O. Box 991, Syracuse 1, N. Y.

***Aug. 29-Sept. 2—Windsor, Ontario**
CANADIAN FEDERATION OF MAYORS AND MUNICIPALITIES. Annual Meeting (Prince Edward Hotel). Exec. Dir., George S. Mooney, Office M-16, Mount Royal Hotel, Montreal, Quebec, Canada.



HERSEY

It has been proven by many years of constant use that the

HERSEY COMPOUND METER

will deliver a more accurate registration of all rates of flow than any single unit or battery of meters. All bronze case from 2" to 6"

A Hersey Creation that has never been equaled

HERSEY MANUFACTURING COMPANY

SOUTH BOSTON, MASS.

BRANCH OFFICES: NEW YORK — PORTLAND, ORE. — PHILADELPHIA — ATLANTA — DALLAS — CHICAGO
SAN FRANCISCO — LOS ANGELES

Municipal & Civic Publications

Statistical Summary of Water Supply and Treatment Practices In the United States

U. S. Department of Health, Education, and Welfare, Public Health Service, Division of Water Pollution Control, Washington 25, D. C. 53 pp. 20 cents.

This publication, prepared by John R. Thoman, senior sanitary engineer of the U. S. Public Health Service, summarizes and discusses in detail information of public water supply and treatment for all incorporated communities of over 100, and all unincorporated communities of over 500. Included among the tabulations are data on sources of water, types of plants, and processes used; also ownership facilities, broken down by regions, states, and population groups.

Industry and Community

Special Issue of the Journal of Education Sociology, *edited by Max Wolff. Published by The Payne Educational Sociology Foundation, 157 W. 13th St., New York 11, N. Y. December 1953. 46 pp. 35 cents.*

In this issue Lemuel R. Bulware tells how big industry visualizes its role in the community. Arthur Morgan does the same for small industry. Dr. Wolff analyzes three typical case histories. Joseph Monserrat tells how industry and the community can work in partnership. Leo Perlis gives Labor's viewpoint on active participation in communal life. Richardson Wood writes of inviting new industry into the community. And Ralph B. Spence tells of further researches needed.

The Big City

An Inquiry Into Civic Participation—*Carrie Chapman Catt Memorial Fund, 461 Fourth Ave., New York 16, N. Y. 1953. 33 pp. 25 cents.*

This report of a special Metropolitan Area Project Committee appointed by the Carrie Chapman Catt Memorial Fund to make a practical exploration of citizen participation in big cities, contains the results of a year's study.

Philadelphia, Chicago, and Cleveland came under special scrutiny, although problems of vountary organizations in other large cities are also covered. A close study of 29 Philadelphia organizations having some interest in government, legislation, or citizenship, is summarized in an attached table. Appendix I gives a plan for citizenship training. Appendix II gives hints for knowing your organization, and Appendix III recommends a citizens' information center.

Directory of Administrative Assistants to City Managers

International City Managers' Association, 1313 E. 60th St., Chicago 37, Ill. January 1954. 7 mimeo. pp. $1.

For 160 council-manager cities and counties are listed assistant city managers, administrative assistants, interns, or other personnel with various titles as assistants to the manager. Other information given includes age, education, date appointed, and annual salary.

The Policeman's Manual

By Captain Carl Vollmer. Arco Publishing Company, Inc., 480 Lexington Ave., New York 17, N. Y. 1954. 113 pp. $2.50.

Captain Vollmer, who writes from experience gained in his long and successful career on the New York City Police Department, has two major aims: (1) to aid in police administration and training by teaching policemen the procedures and laws which govern the protection of life and property, and the apprehension of law-breakers, and (2) to summarize, in an easy-to-remember fashion the information a policeman needs when preparing for a promotional examination.

A coding system, used as a memory aid, is employed to help clarify for the individual policeman what should be done in every particular emergency.

Check List for a Model Municipal Budget and Its Comparison With The Worcester City Budget

Prepared by Charles A. McCoy, Chairman, Research Committee, Citizens' Plan E Association, Room 304, 274 Main St., Worcester, Mass. January 1954. Mimeo. 8 pp.

The model check list covers the budget message which sets forth the financial plan for the City Council, the general budget summary which presents finances in tubular form, the budget document which includes supporting facts and figures, the appropriation bill in which the Council acts to put the budget into effect, and the performance budget, which shows the relationship between the financial plan and the work to be performed. As the title indicates, the practices in Worcester are compared with this check list.

The Value of Manuals

Published by Municipal Finance Officers Association of the United States and Canada, 1313 E. 60th St., Chicago 37, Ill. Special Bulletin 1953-J. November 1953. 8 pp. $1.

This comprehensive discussion of manuals is based on a paper given by John B. Massen at the 47th Annual Conference of the MFOA. Manuals are useful in that they contain written instructions for recurring situations, forms for standing instructions, and other work simplifying elements, according to this bulletin. The preparation of manuals is also discussed. As the author says, "the manual permits your most inexperienced employee to apply your trained judgment to a situation with which the employee is largely unfamiliar."

Municipal Government in New Jersey

By Stanley H. Friedelbaum. Rutgers University Press, New Brunswick, N. J. 1954. 56 pp. $1.

The basic data concerning the functions and organization of municipal government in New Jersey, herein contained, should be of use to municipal officials and interested citizens. In addition to describing the characteristics and development of various types of municipal organization, the booklet discusses judicial administration and public safety, municipal services, finances, and changing patterns of municipal government.

A Dynamic Highway Policy For the Future

—Chamber of Commerce of the United States, Washington 6, D. C. 1954. 114 pp. $2.

At the National Conference on Highway Finance, sponsored by the Chamber of Commerce of the United States, on December 10-11, 1953, some 300 delegates representing business and government considered the following questions basic to the determination of an effective highway policy:

1. Where do we stand today with relation to street and highway needs?
2. Should federal automotive excise taxes on gasoline and diesel oil be repealed, leaving these taxes exclusively to the states?
3. What should be the size of the federal-aid highway program in the future?
4. Should the concentration of federal funds on interstate and primary highway routes be increased?
5. How much can be expected from toll roads in solving the nation's highway needs?
6. From what sources should come the major share of additional highway revenues?

This report is a record of the prepared talks and informal discussions which took place at the conference.

Survival Through Design

By Richard Neutra. Oxford University Press, New York. 1954. 324 pp. $5.50.

Some reasons why this book ought to interest many of THE AMERICAN CITY's readers are set forth in the article by Mr. Neutra on page 122 of this issue and in the editorial comment, "For Less Irritation in Urban Life," on page 5.

Throughout the book, which seeks to point into a future of happier living with and through design, the author stresses his conviction that the task of constructing the many things that make up a human environment and should assure the survival of the race, cannot be accomplished well without the use of current and available scientific knowledge. He points out, however, that the designer cannot be wholly governed by scientific attitudes or methods, but must rely also on intuitive insight.

A 44-page chapter of "Survival Through Design," is devoted, in the main, to community planning as a science and an art.

Where's Flint Going?

A comparative survey by The Flint (Mich.) Journal, *written by staff writer Homer E. Dowdy. 1954. 36 pp.*

The 22 articles originally published serially in *The Journal* are here made available in book form to meet the many requests received. They are based on a seven-months' study of how other fast-growing cities have solved their metropolitan problems in ways that might be applicable to Flint. No attempt has been made to recommend one method over another as *The Journal* believes that the Flint Area citizens will select the proper method.

Ponca City's NINTH Nordberg engine—a 12 cylinder two-cycle Duafuel® unit rated 5135 hp.

9th BIG NORDBERG DIESEL for PONCA CITY, OKLAHOMA

"Ponca City has been *TAX FREE* for 20 years...aided by Modern Diesel Power..."

says Mr. PAT SCHLESINGER
Plant Superintendent

• During the past ten years, the Ponca City Light Department has earned net profits approaching *FIVE MILLION DOLLARS.* These profits have financed all plant expansion and civic improvements and have paid practically all the costs of local government. Ponca City has been *TAX FREE* for the past 20 years.

The secret behind this impressive record lies in sound, efficient management and the reliable, low cost operation of Nordberg Diesel and Duafuel® power. With this successful background, it was natural that when Ponca City needed more power, officials again turned to Nordberg . . . and placed a repeat order for their NINTH engine . . . a new 5,135 hp Duafuel® unit which brings the total supplied capacity up to 22,660 horsepower—all *Nordberg.*

This is another good example of the way in which Nordberg engines are being used to solve scores of power problems efficiently and at low cost . . . for public and private utilities, and industry at large. Backed by engine building experience and service *second to none,* it will pay you to think of Nordberg when you think of power. Write for further information, outlining your power requirements. *Nordberg Mfg. Co., Milwaukee, Wisconsin.*

NORDBERG

DIESEL • DUAFUEL® AND SPARK-FIRED GAS ENGINES

P154

America's Largest Heavy Duty Engine Line—10 to over 10,000 H.P.

The Book of the States

1954-55 Edition—*The Council of State Governments*, 1313 *E. 60th St., Chicago* 37, *Ill.* 686 *pp. Price, with* 1955 *Supplement*, $10.

This is the 10th edition of the standard reference work on state governments—their organization, activities, finance, and personnel. The book, new and comprehensive, was compiled and edited by the Council of State Governments. Leading authorities contributed articles and summaries in the major fields covered. A *Supplement* early in 1955 will present new lists of elective officials and legislators.

The current edition, cloth bound, comprises eight sections. These deal with intergovernmental relations, state constitutions and election laws, legislatures and legislation, administrative systems, finances, major state services, state judicial systems; and state-by-state statistical summaries and means of principal officials.

Municipal Use of Financial Consultants

Published by Municipal Finance Officers Association of the United States and Canada, 1313 *E. 60th St., Chicago* 37, *Ill.* 32 *pp.* 50 *cents per copy. Subscription* $1.50 *per year (quarterly).*

The February issue is devoted to articles on financial consultants. Among these are the following titles and authors:

"The Finance Office and Administrative Consultants"—By H. G. Pope.

"The Role of the Consulting Engineer in Revenue Bond Financing"—By Charles De Leuw.

"The Need, Function, Value and Cost of a Municipal Financial Consultant"—By J. Carlisle Youngberg.

"Functions of a Municipal Financial Consultant"—By J. Basil Ramsey.

"The Municipal Financial Consultant at Work"—By Matthew Carey.

Reports of Planning Progress in Five New Jersey Communities

The Planning Boards of the Boroughs of East Paterson, Old Tappan, and Pompton Lakes, and the Townships of Little Falls and Mahwah, all in the State of New Jersey, have published, since January 1954, Planning Progress Reports prepared by Morrow Planning Association, 45 North Broad St., Ridgewood, N. J.

A Master Plan for Frankfort, Indiana, 1953

Metropolitan Planners, Inc., 800 Board of Trade Bldg., Indianapolis, Ind., under the direction of Mayor Charles J. Goder and The City Plan Commission of Frankfort. 28 *pp.* $3.

New traffic patterns to increase the use of present streets, improved parking design around the courthouse, school grounds, and recreational expansions, establishment of a Frankfort airport, as well as designation of vacant land as a heliport, are among the projects recommended in Frankfort's Master Plan.

As a guide for orderly future growth of a city of some 15,000 this plan should arouse the interest of municipal and civic leaders in other communities as it has already done in the City of Frankfort.

Obstruction Marking and Lighting

Civil Aeronautics Authority. For sale by the U. S. Government Printing Office, Washington 25, *D. C.* 42 *pp.* 30 *cents.*

This booklet contains newly revised recommended standards for marking and lighting obstructions to air navigation and detailed information on the need to provide uniform night and day identification of natural and man-made obstructions.

It discusses and illustrates with diagrams, and drawings, the recommended methods of marking and lighting towers, poles, bridges, water towers, high ground, smoke stacks, buildings, and other obstructions to air navigation of various heights. It also includes a discussion of the marking of hazard areas where several obstructions are grouped together and recommended lamps and candlepower for the different types of obstruction.

Forms for Performance Bonds

Planning Advisory Service Information Bulletin No. 58. *American Society of Planning Officials*, 1313 *E. 60th St., Chicago* 37, *Ill. January* 1954. 31 *pp. Available to subscribers for the service.*

These specific forms for performance bonds used in various jurisdictions are based on inquiries sent to cities and counties known to have some kind of performance bond. The Information Report describes, also, several principles which must be kept in mind in all subdivision control and particularly in regard to requirements for the installation of improvements.

MANUFACTURER'S REPRESENTATIVES WANTED

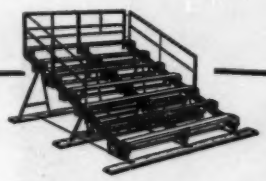
to sell to counties, cities and towns—

a complete line of Traffic Signs utilizing Reflexite, the reflecting material now used on super highways such as Merritt Parkway, New Jersey Turnpike, etc. Also barricades, delineators, street name signs and traffic paint.

For complete information, write to

Reflexite Corp.

63 Wall Street, New York 5, N. Y.



Single Section Model 6 Portable Bleacher

PORTABLE SEATING FOR EVERY OCCASION

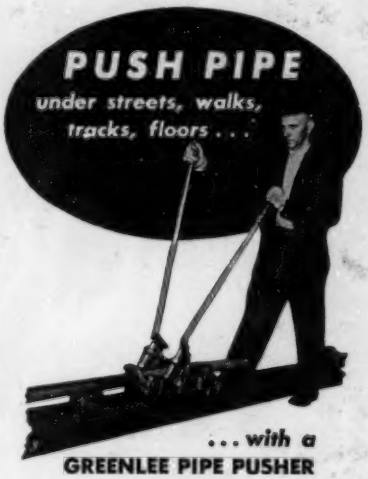
With Hussey Patented Portable Steel Bleachers and Grandstands, one set of seats will take care of both your indoor and outdoor needs. They cannot collapse and can be erected and taken down faster and easier than any other stand on the market. Low in cost. 6, 10 and 15 tier 12 foot sections IN STOCK. Other sizes made to order.

FREE catalogs and complete information on request. Write today.

Iron-workers HUSSEY Since 1835

HUSSEY MFG. CO., INC.
546 R. R. Ave., N. Berwick, Maine

Also mfrs. of Water Sports Equipment, Flag Poles, Fire Escapes and Misc. Iron.



. . . with a GREENLEE PIPE PUSHER

Speed jobs with this quick, simple way to install underground pipe. With the GREENLEE *one man* pushes pipe under obstacles . . . no tearing up of pavement, floors, lawn . . . eliminates extensive ditching and tedious backfilling! Two models and special power pump to fit your various jobs. Write for facts today.

GREENLEE

Greenlee Tool Co., 2024 Columbia Ave., Rockford, Ill.

WATER is vital...

BADGER meters conserve it!

America now uses more than *7 billion gallons* of water per day . . . making conservation of supply almost as vital as the water itself. That's one reason Badger meters are used in thousands of communities throughout the nation. Badger meters measure water precisely . . . are made for every kind of water measuring job . . . provide an accurate check of water usage and water waste. And the Badger meter record of performance is unsurpassed . . . has caused waterworks men everywhere to agree — "It pays to install Badger meters!"

BADGER WATER METERS

BADGER METER MFG. CO., Milwaukee 45, Wisconsin

"Measuring the water of the world"

Social Work Year Book 1954

Edited by Russell H. Kurtz. American Association of Social Workers, 1 Park Ave., New York 16, N. Y. January 1954. 703 pp. $6.

Municipal officials concerned with public health, social welfare, and allied problems will find much of value in this year book. The book now in its 12th edition, brings up to date descriptions of organized activities in social work and related fields. For each of 520 national, international, and Canadian agencies, the directory section reports name and address, principal officer, statement of purpose and activities, etc. An appendix listing periodicals and the bibliographies appended to each article will also prove helpful.

The topical articles constituting Part I are written by authorities in their fields, and cover such aspects of social work as adoption, the aging, community organization, courts, guidance and counseling, public health, recreation, youth services, etc.

Magnificent Whistle Stop

The 100-Year Story of Mendota, Ill. *Published by the Mendota Centennial Committee, 1501 Washington Rd., Mendota, Ill. 1953. 473 pp. $4.35.*

As part of its centennial celebration, Mendota has written its history — and briefly, that of its celebrities, including "Wild Bill" Hickok, Herbert O. (Fritz) Crisler, and Helen Hokinson. Needless to say this colorful and humorous book will be a best seller in and around Mendota; and it may inspire other cities and towns to record their stories.

Modern Gardens

Masterworks of International Garden Architecture. By Peter Shepheard. Frederick A. Praeger, Publishers, 105 W. 40th St., New York 18, N. Y. February 1954. 144 pp. $9.50.

Gardens varying in size from 25-foot suburban areas to the several square miles of Stockholm's famous public parks and including interior, roof, town, woodland, seaside, and desert types, are illustrated in this book which pioneers in the field of modern garden design and planning.

Since modern gardens, like modern architecture, are found in many countries, the author has drawn his characteristic examples from the work of landscape designers in Belgium, Brazil, Denmark, England, France, Switzerland, Sweden, and the United States. In addition to the photographs, there are numerous complete plans and descriptions of the designers' methods and principles, as well as of the materials used for paving, walls, etc.

Allegheny's Smoke Control

Allegheny County Bureau of Smoke Control, 325 County Office Bldg., Pittsburgh, Pa. May 31, 1953. 44 pp.

The steel industry, the coal industry, railroads, and miscellaneous industries have continued their efforts to free Allegheny County of the smoke nuisance, as this progress report shows. Homeowners, too, have had to comply with the provisions of the smoke-control ordinance that prohibit the use of high-volatile coal. Various methods of improving conditions, here described, should be helpful to officials of many smoke-ridden communities.

Capital Improvement Program

1954-55 Through 1959-60 — *Published by the San Francisco Department of City Planning, 100 Larkin St., San Francisco 2, Calif. January 1954. 96 pp.*

In this report the City Plan Commission reviews the capital improvements proposed by each city department in their relationship to the master plan. The city-wide land-use plan, the trafficways plan, and the civic center come under special scrutiny. The report outlines progress on construction and proposed further construction, including methods of financing.

This 6th annual Capital Improvement Program issued by the Commission shows many of the projects mentioned in the first report as being completed or now under construction.

Manual for Volunteer Fire Departments in Wisconsin

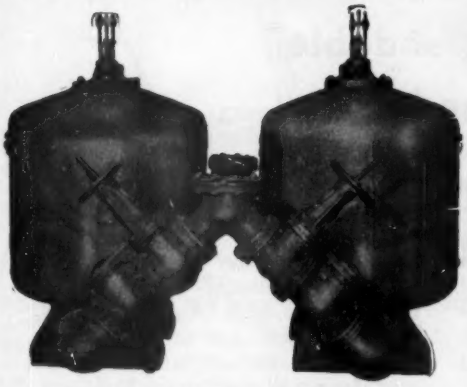
Issued by the League of Wisconsin Municipalities, 30 E. Johnson St., Madison 3, Wis. 1954. Revised. 41 pp. $1.

This manual was prepared to clarify some of the misunderstandings that occur as to the powers, duties, liability, and official status of vounteer fire departments in Wisconsin. It also offers suggestions on the organization and operation of a volunteer department, and contains a model ordinance and bylaws. Much of the information contained in the manual is applicable also to paid or partly paid departments.

THE MODERN WAY

TO LIFT SEWAGE AND SLUDGE AT TREATMENT PLANTS

USE BLACKBURN-SMITH PNEUMATIC SEWAGE EJECTORS



Duplex Sewage Ejector, showing inlet piping.

PREFERRED by most prominent consulting engineers as **LESS MESSY MORE SANITARY** than centrifugal submerged type sewage ejectors or pumps.

ENDS CLEANING of screens and pumps.

LIFTS STRAIGHT UP, 150 feet capacity, once a minute, without fail.

30 to 500 GPM in both single and twin units against high discharge heads.

Over 60 years service has proved the rugged worth of Blackburn-Smith Ejectors. Yet our today's product is full of exclusive modern features such as: 1. Float and electrical float switch controls. 2. Float and pneumatically controlled snap action valve. 3. Electrode controls.

Any one of the above, with or without Air Receivers.

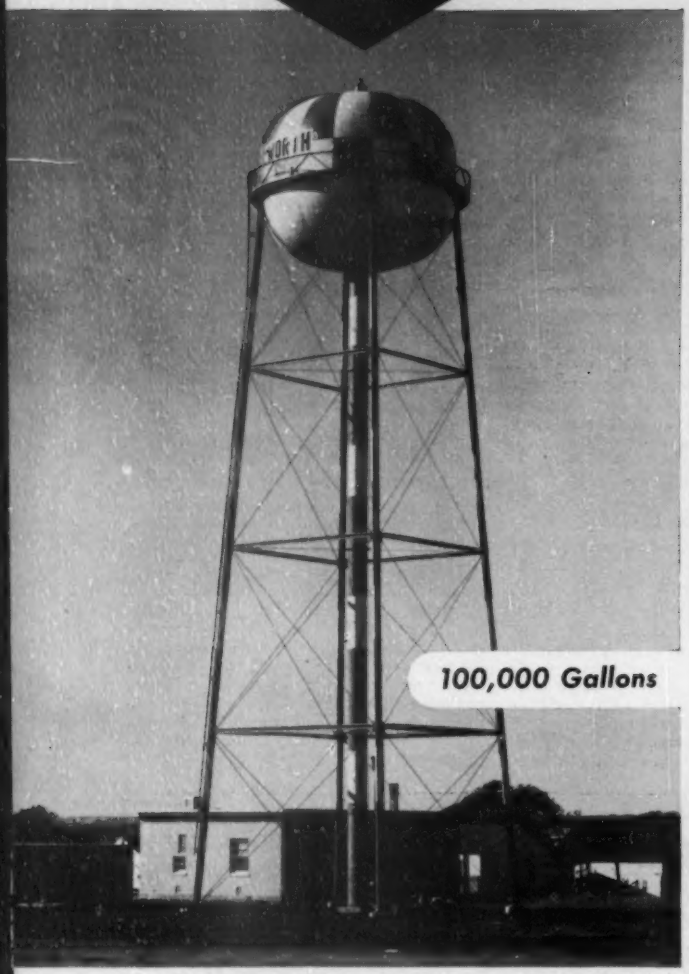
Get Catalog S50 today

BLACKBURN-SMITH MFG. CO. 150 OBSERVER HIGHWAY HOBOKEN, N. J.

New!
PORTABLE POWER
MODEL 45 MGW4
5 K.W.
KATOLIGHT
POWER PLANTS
Wheel Mounted
for use anywhere!
Whatever your Municipal Department's needs, you'll find a KATOLIGHT Generating Unit, Continuous or Standby Plant, available. Choice of air or water cooled, well known make gasoline engines. Up to 50 KW. Also Motor Generators Sets, High Frequency Generators, Converters, Frequency Changers and Independent Generators to 300 KW.
Write Regarding Your Requirements Today!

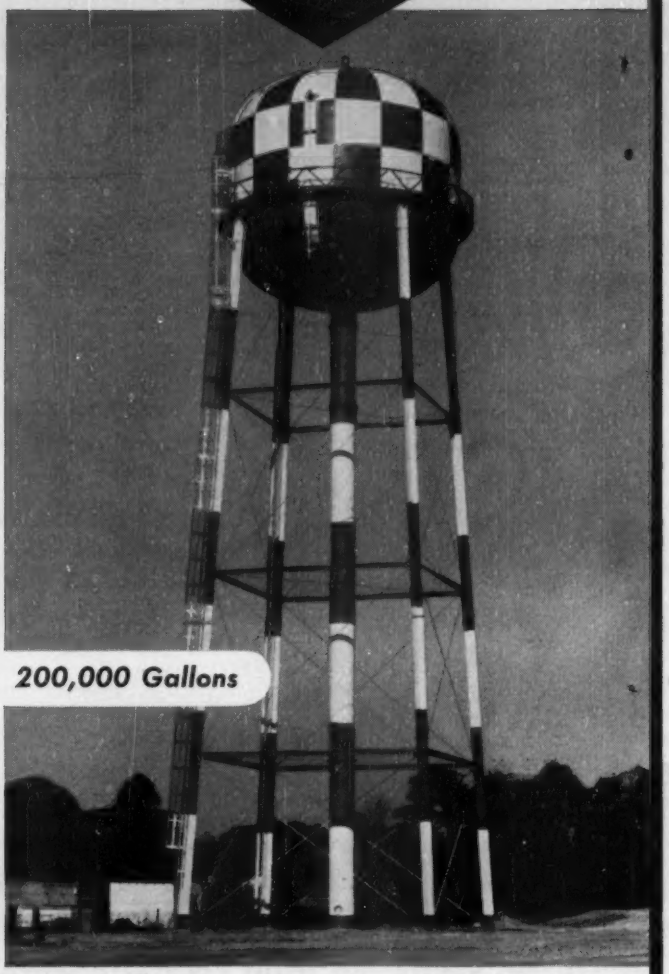
KATOLIGHT CORPORATION
Box 491-25 Mankato, Minnesota

LAKE WORTH
Texas



100,000 Gallons

LITTLE CREEK
Virginia



200,000 Gallons

Typical Examples of dependable low cost water storage by

PITTSBURGH-DES MOINES

These representative Pittsburgh-Des Moines Elevated Steel Tanks are of our popular Double-Ellipsoidal design, on 100 ft. H-column towers. They provide maximum value in standard construction, meeting a wide range of municipal water storage requirements. Many other PDM elevated tank types are available for special needs, with H-column, box or tubular column towers. Write for our comprehensive Modern Water Storage brochure.

PITTSBURGH-DES MOINES STEEL CO.

Plants at PITTSBURGH, DES MOINES and SANTA CLARA

Sales Offices at:

PITTSBURGH (25)	3412 Neville Island	DES MOINES (8)	913 Tuttle Street
NEWARK (2)	215 Industrial Office Bldg.	DALLAS (1)	1217 Praetorian Building
CHICAGO (3)	1216 First National Bank Bldg.	SEATTLE	520 Lane Street
LOS ANGELES (48)	6399 Wilshire Blvd.	SANTA CLARA, CAL.	619 Alviso Road

The Integration of Fire and Police Services

By Charles S. James. An article in the February 1954 issue of Public Management, *published by the International City Managers' Association, 1313 E. 60th St., Chicago 37, Ill. Single copies 50 cents. Subscription $4 a year.*

The author, who is currently participating in a research project on the integration of police and fire departments, here surveys six cities where the same men provide both police and fire services, and comes up with the conclusion that the main problem is that of good administration.

Recreation Program Aids

Published bimonthly by the National Recreation Association, 315 Fourth Ave., New York 10, N. Y. $5 a year for nonmembers, $3.50 for members of the National Recreation Association.

This new bulletin service, designed to enrich recreation programs, will not duplicate but will supplement the material published in *Recreation* magazine. The program bulletins will be on such subjects as arts, crafts, dance, drama, games, music, nature, parties, and sports.

Other Reports Received

Administration and Government

AUGUSTA, GA. — Year Book of the City Council. Office of Thomas D. Beckum, Clerk of Council. 1952. 43 pp.

BEVERLY HILLS, CALIF.—Report from Your City Council. Second in a series of Progressive Reviews. Bond-Issue Election. Vol. 1, No. 2, February 1954. Illus. Unpaged.

COLUMBIA, S. C.—Your City Government. 1953 Annual Report. Write to Office of City Manager for copies. Illus. 28 pp.

PASADENA, CALIF.—People, Taxes, and Government, 1953. Submitted by Office of City Manager. Illus. 60 pp.

SCHENECTADY, N. Y. — Schenectady Report and Manual. 1952. Copies of this booklet may be obtained from the City Clerk's Office or the City Manager's Office. 31 pp.

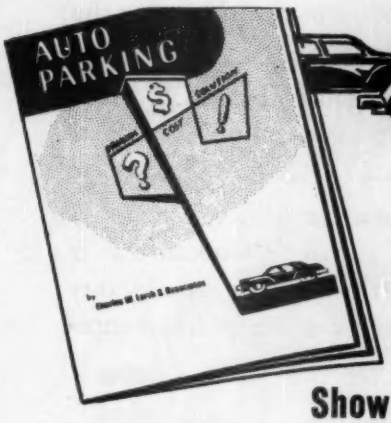
GENERAL—Recent Council-Manager Development and Directory of Council-Manager Cities. January 1954. Obtainable from The International City Managers' Association, 1313 E. 60th St., Chicago, Ill. Tables. 32 pp.

Annual Reports

FARMINGTON, CONN.—Annual Report of the Town. 1953. This report is the Eighty-Eighth Consecutive Report available, and the Sixth under Council-Manager Form of Government. Illus. Tables. 31 pp.

GRANITE FALLS, MINN. — A Report on Your City for 1953. A report on the use of your tax dollar and a summary of activities of city departments. Prepared by the office of the City Manager. Illus. Unpaged.

MONTEREY, CALIF.—Your City Presents The Monterey Story for the Fiscal Year Ending June 30, 1953. Second in a Series of Annual Reports. Edited and Directed by Robert H. Oldland, Assist-



Let Us
Show You How PROFITABLE
a VERTICAL GARAGE Can Be For YOU!

We design parking garages for your location. We plan their capacity and profits.

Cost of various types of vertical garages. Which one is best suited to your needs. Cost of operation.

Estimate of cars accommodated by various types of garages. Probable net income on investment. Parking rates.

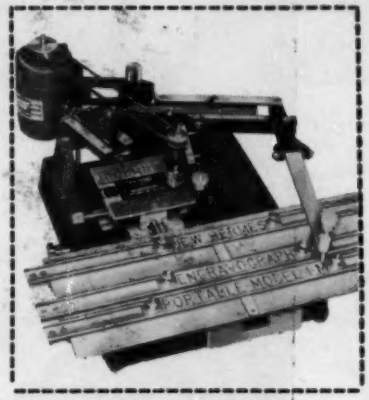
We can find the answers for you quickly and surely.

FREE—if you write on your letterhead—our book "Auto Parking."

Charles W. Lerch & Associates
1172 Board of Trade Building · Chicago 4

engrave
your own
signs

MARKERS
NAMEPLATES
right on the premises



Portable machine,
so simple to operate
by anyone

- Make permanent attractive signs at less cost.
- Engraves on plastics, wood or metals.
- Tested and approved by City Departments.

For complete information write Dept. 87

NEW HERMES
ENGRAVING MACHINE CORPORATION
13-19 University Place · New York 3, N.Y.

Thousands of feet of Vitrified Clay Pipe sewers are being installed to serve many aircraft defense workers who live in this Santa Monica, Calif., residential area. The project is being handled by contractors N. J. Tomovich and J. P. Evans.

Wherever There's Expansion . . . Clay Pipe is *first choice for SAFE SEWERAGE!*

Ask the officials and engineers of almost any expanding locality, and they will tell you that Vitrified Clay Pipe is the *first-choice sewerage material* to meet the requirements of growing areas.

In one project after another, you find that Clay Pipe is first choice for availability, easy installation, and never-wear-out performance.

When a project is being financed over the years by a bond issue, Clay Pipe is a "must," because it is *guaranteed for 50 years.* Whenever you specify, buy or install sewer lines, insist on the performance-proved material . . . Vitrified Clay Pipe.

NATIONAL CLAY PIPE MANUFACTURERS, INC.

1520 18th St. N.W., Washington 6, D. C.

311 High Long Bldg., 5 E. Long St., Columbus 15, Ohio
703 Ninth & Hill Bldg., Los Angeles 15, Calif.
100 N. LaSalle St., Rm. 2100, Chicago 2, Ill.
206 Connally Bldg., Atlanta 3, Ga.

Vitrified CLAY PIPE

C-354-1

ant City Manager. Illus. Graphs. 35 pp.

MOUNT UNION, PA.—Annual Report for the Year Ending December 31, 1953. Tables. Mimeo. 20 pp.

WILMINGTON, DEL. — Annual Report and Statement. Compiled by Alexander R. Abrahams, City Treasurer. Illus. Tables. Graphs. 98 pp.

Finance and Taxation

CONTRA COSTA COUNTY, CALIF. — Report on Local Public Finance in 1953. Prepared by Contra Costa County Taxpayers' Association, Harry L. Morrison, Jr., Exec. Dir. Research Bulletin, No. 5, Public Information Service, January 1954. 620 Las Juntas, Martinez, Calif. Tables. 16 pp. $1.

MINNEAPOLIS, MINN. — Final Budget Estimate for 1954. Issued by the Board of Estimate and Taxation. Tables. 71 pp.

PHOENIX, ARIZ.—Annual Financial Report. Fiscal Year Ended June 30, 1953. Tables. 140 pp.

QUEBEC, CANADA — Statistical Year Book 1953. Published by authority of the Hon. J. Paul Beaulieu, C.A., D.S.C., Minister of Trade and Commerce. Published in English and French. Tables. 637 pp.

Lighting

PAINESVILLE, OHIO—Painesville's "Light of Your Life" Festival. For copies, address Office of City Manager. Illus. Unpaged.

Planning, Housing and Zoning

BOSTON, MASS.—Capital Improvement Program, 1954-1959. Office of the City Planning Board, 43 City Hall, Boston 8, Mass. Illus. Tables. 72 pp.

GRAND RAPIDS, MICH.—Working Together . . . You—and Your Planning Commission. . . Can Insure That. A planned program of community action —already in action. Available from Planning Commission, Room 401, City Hall. Illus. Unpaged.

MARYLAND — 1955 Fiscal Year Long-Term Capital Improvement Program. Publication No. 84 by Maryland State Planning Commission to the Department of Budget and Procurement in cooperation with Department of Public Improvements. September 15, 1953. Maryland State Planning Commission, 100 Equitable Bldg., Baltimore 2, Md. Tables. 88 pp. 50 cents.

MEMPHIS, TENN. — Do You Know? How Memphis Is Housed? 1952-1953 Annual Report of the Memphis Housing Authority, 264 N. Lauderdale, Memphis, Tenn. Illus. Unpaged.

NORFOLK, VA.—Another Year of Progress. The Norfolk Story. 1953. Presented by H. H. George III, City Manager. Illus. Unpaged. Newspaper form.

PENNSYLVANIA — Planning and New Residential Development. A report on residential building in Bucks, Delaware and Montgomery Counties, Pa. — 1940-1953 — and Its Significance for Planning. Prepared by David D. Longmaid, Exec. Sec., and Glenn Hutchinson, Planning Analyst of Southeastern Pennsylvania Regional Planning Commission, Bridgeport, Pa.,

. . with this

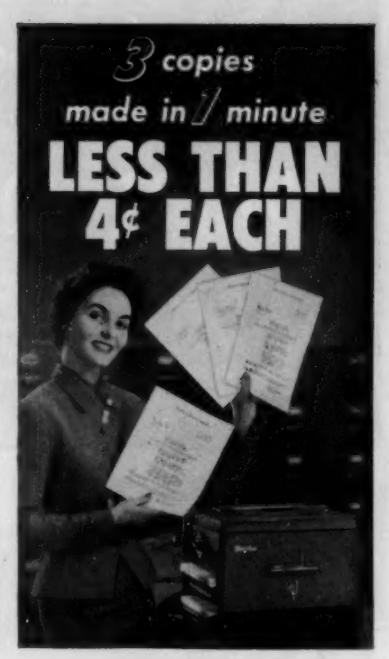
F & E INCINERATOR STOKER

Patents Pending

F&E Incinerator Stokers apply not only to new incinerator plants, but to many now existing furnaces. Results—up to 50% increased burning capacity; big reduction in labor; big reduction in maintenance.

F&E FLYNN & EMRICH CO.

301 N. Holliday St. ★ Baltimore 2, Maryland



See how it's done—right in your office—with the sensationally different Kodak Verifax Printer, now distributed nationally by Recordak Corporation.

Your copies cost less than 4¢ apiece because you make them on non-sensitized paper; and you get 3 or more copies from each sheet of Verifax matrix paper.

You'll see at once how your savings in retyping costs alone will soon exceed the low purchase price of this truly remarkable copier—*only $240.*

Anyone in your office can make these photo-exact copies of letters, charts, news clippings, etc. And under normal room lighting, too.

Verifax copying saves wherever there's paper work

. . . see for yourself without the slightest obligation. Prompt service from anyone of Recordak's 29 offices

—MAIL COUPON TODAY—

Recordak Corporation
(Subsidiary of
Eastman Kodak Company)
444 Madison Avenue
New York 22, N.Y.

Gentlemen: Please send free Verifax folder and address of nearest Recordak office.

Name_____

Company_____

Address_____

City_____ State_____

RECORDAK

Price quoted is subject to change without notice.

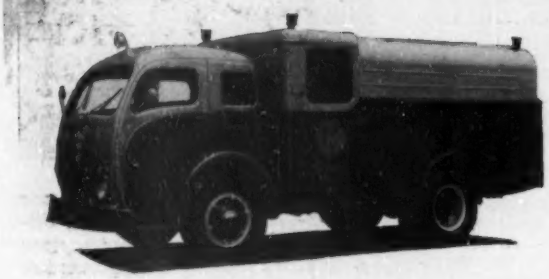
R25

It takes all kinds of bodies, but . . .

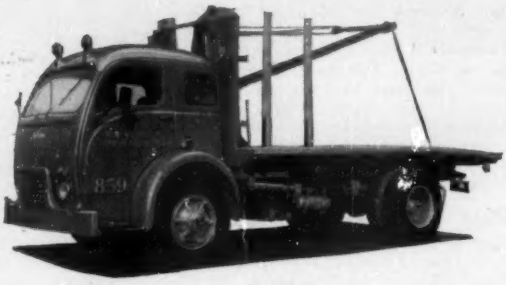
THERE'S NOTHING LIKE THE WHITE 3000!

Here are only a few of the many different jobs the White 3000 is doing for the New York City Transit Authority . . . who want maximum maneuverability and space-savings for Manhattan's traffic-congested streets. They call on the White 3000—tomorrow's truck today!

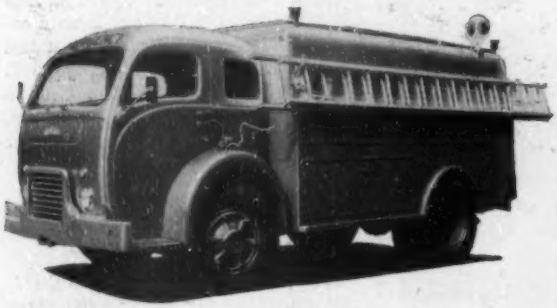
DUMP TRUCK work handled by this White 3020 requires best maneuverability in congested areas, among elevated pillars, in garages. Used for coal, asphalt, sand, gravel and debris.



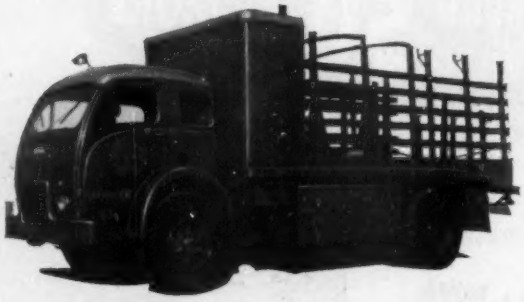
POWER DEPARTMENT handles crew and equipment with real savings in overall length with this White 3000 with extra crew compartment.



TRACK-LAYING UNIT—Less traffic and passenger service tie-up with this White 3000 used for track-laying on surface lines.



UTILITY WORK gets done faster by White 3000. Its modern design saves time in traffic and its compact styling saves garaging space and room on the streets.



CABLE REEL TRUCK—Plenty of body capacity and room for crew without going to longer overall length. Saves traffic time for power department.

Tips its cab to service

THE WHITE MOTOR COMPANY

Cleveland 1, Ohio

For more than 50 years the greatest name in trucks

January 1954. Tables. Maps. 82 pp. $1.25.

POMONA, CALIF. — 1950 to 1953 — Three Years of Municipal Progress in the City. Illus. 64 pp.

PROVIDENCE, R. I.—The Effect of Expressway Construction on Surrounding Properties. Publication No. 12. December 1953. Copies available from City Plan Commission, Suite 103, City Hall, Providence 3, R. I. Graphs. 10 pp.

——Annual Report of the City Plan Commission for the Fiscal Year Ended September 30, 1953. Mimeo. 7 pp.

RICHMOND, VA.—5 Years of Progress, 1948-1953. A report to the citizens. Copies may be secured from the Office of the City Manager. Tables. Illus. 64 pp.

Public Safety

GEORGIA—Municipal Police. Study made in cooperation with The Peace Officers Association of Georgia. Public Administration Studies No. 4. Bulletin of the University of Georgia, Bureau of Public Administration, Athens, Ga. Tables. 32 pp.

Public Works

NEW YORK, N. Y.—1953 Annual Report of Department of Public Works. The Year of the 300th Anniversary of the City. Illus. Graphs. Maps. Tables. 143 pp.

Recreation

COLORADO SPRINGS, COLO. — Recreation. A Summary of Statistics for the Year 1953. Department of Recreation.

GREENSBORO, N. C.—Parks and Recreation. Annual Report 1953. Prepared by the Department of Parks and Recreation. Illus. Unpaged.

Sewage

CINCINNATI, OHIO — Five-Year Report, July 1948 to July 1953. Metropolitan Sewage Disposal Program. Tables. Map. 31 pp.

Traffic

PASSAIC-BERGEN, N. J.—Proceedings of the Conference on Passaic-Bergen Traffic Problems, held January 13, 1954, at the Passaic-Clifton Y.M.C.A., Passaic, N. J. Auspices: Passaic-Bergen Community Planning Association. 19 pp.

Water

SPARTANBURG, S. C.—Water—"Keystone of Progress." Illus. Tables. Graph. Map. Unpaged.

GENERAL—Ohio River Valley Water Sanitation Commission. Fifth annual report . . . of interstate pollution-control activities to the Governors of Illinois, Indiana, Kentucky, New York, Ohio, Pennsylvania, Virginia, West Virginia. For copies, address the O.R.V.W.S.C., 41 Walnut St., Cincinnati 2, Ohio. Illus. Graphs. Tables. 28 pp.

WASHINGTON, D. C.—Report on Water Pollution in the Washington Area. Section I, Summary; Section II, Technical Report; and Section III, Appendices. Issued by the Inter-State Commission on the Potomac River Basin, 203 Transportation Bldg., Washington 6, D. C. February 1954.

New hi-performance Jaeger pump

Pumps all the water a 2" hose can handle . . .

at easy, long-life engine speeds.

Weighs only 160 lbs. on base, 190 on pneumatics.

Delivering 10,000 gph when operating at only 2400 to 2550 rpm, this latest Model 2PN will actually pump all the water that can be pulled through a 2" suction line under average working conditions. In spite of this high capacity and pressure it is extremely light, compact and economical in price. *Ask your Jaeger distributor or write us.*

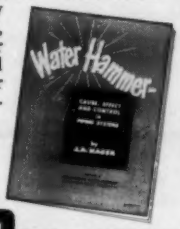
THE JAEGER MACHINE COMPANY 505 Dublin Avenue Columbus 16, Ohio

LOADERS • COMPRESSORS • MIXERS • PAVING MACHINES

Eliminate
Costly and Dangerous
WATER HAMMER
in your piping system
with

WILLIAMS-HAGER FLANGED
Silent
CHECK VALVES

Yes . . . compact, durable and dependable Williams-Hager check valves will eliminate expensive and troublesome noise in *your* piping system. Available for standard pipe sizes from 1" to 20", they operate with maximum efficiency in horizontal, vertical or angular. Send coupon for complete details.



MAIL THIS COUPON TODAY

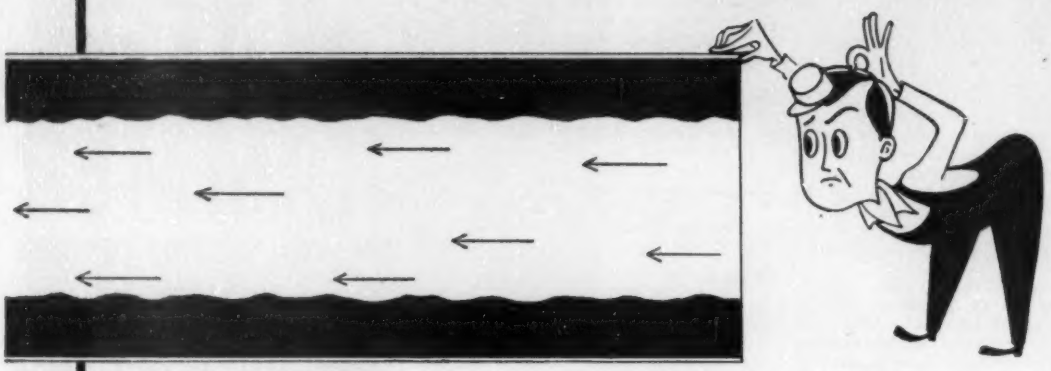
THE WILLIAMS GAUGE CO., INC. AC-454
3013 Pennsylvania Avenue
Pittsburgh 33, Pa.

Please send a copy of Bulletin WH-851 on "Water Hammer, Cause, Effect and Control in Piping Systems."

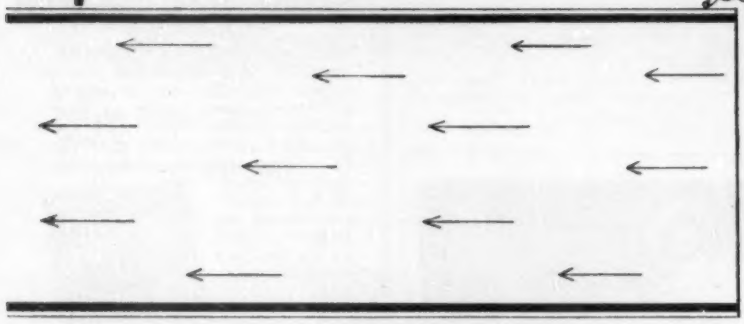
NAME_____
TITLE_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE___ STATE_____

CHECK VALVES
THE WILLIAMS GAUGE CO., INC.
3013 Pennsylvania Ave., Pittsburgh 33, Pa.

LOW FLOW CAPACITY



High Flow Capacity



...Bitumastic 70-B Enamel makes the difference by preventing corrosion

Flow capacity *stays* high when Bitumastic® 70-B Enamel protects interior surfaces of steel pipe lines. This durable enamel prevents rust, corrosion, incrustation and tuberculation . . . keeps pipe lines from "shrinking." With this kind of protection, there's no need to spend money on *over-sized* pipe in order to allow for future loss in flow capacity. Flow tests conducted on steel pipe lines, centrifugally lined with hot Bitumastic 70-B Enamel, have shown the value of Hazen-Williams coefficient "C"=145 to 160.

You can save money in another way with Bitumastic 70-B Enamel. When applied to a thickness of 3/32", it protects the exterior of pipe against the corrosive action of the soil. It is wasteful to specify an excess of wall thickness to compensate for corrosion. It is more economical to specify just enough wall thickness to give the pipe adequate structural strength and to use Bitumastic 70-B Enamel to prevent corrosion.

Use strong, durable steel pipe, lined and coated with Bitumastic 70-B Enamel, and give your community worth-while savings. Write for full information on protecting large-diameter water lines.

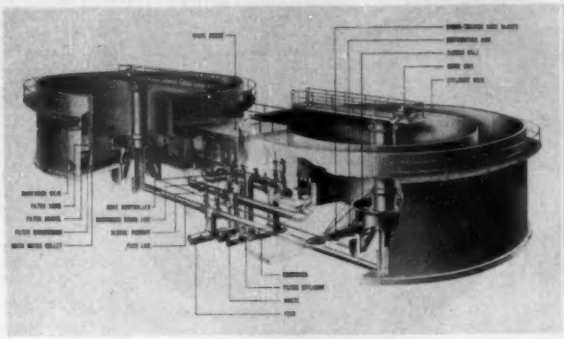
BITUMASTIC 100TH Anniversary PROTECTION 1854 1954

KOPPERS BITUMASTIC ENAMELS

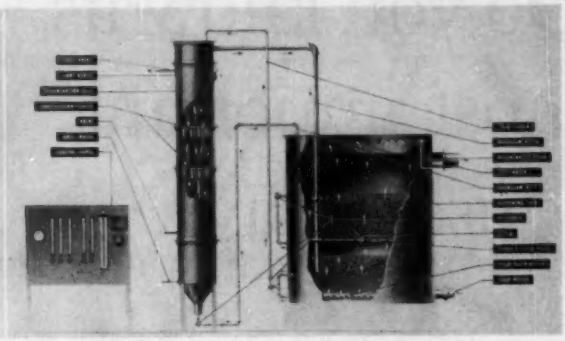
KOPPERS COMPANY, INC., Tar Products Division, Dept. 224-T, Pittsburgh 19, Pennsylvania
DISTRICT OFFICES: BOSTON, CHICAGO, LOS ANGELES, NEW YORK, PITTSBURGH, AND WOODWARD, ALA.

Purchasing News

Information for officials interested in equipment and services for the construction, operation and maintenance of municipal utilities



The Aldrich PeriFilter System utilizing two units equipped with Hydro-Treators surrounded by rapid sand filters.



The new Dorrco Hydro-Softener completely eliminates batch operation, and can remove 99% of the hardness.

Three New Water and Sewage Units

Three new types of equipment designed to make water and sewage treatment easier have been announced by the Dorr Company, Stamford, Conn. These are the Dorrco Aldrich PeriFilter System and Dorrco Hydro-Softener for water plants; and the Dorrco Densludge Process for the continuous thickening of sewage sludge.

The first of these, the Dorrco Aldrich PeriFilter System combines pre-treatment and filtration of municipal water supplies in a single unit, lowering both installation and operating costs. Color, hardness, iron manganese, or turbidity is removed from the water in a mechanical pre-treatment unit, and residual turbidity and bacteria in an annular rapid sand filter.

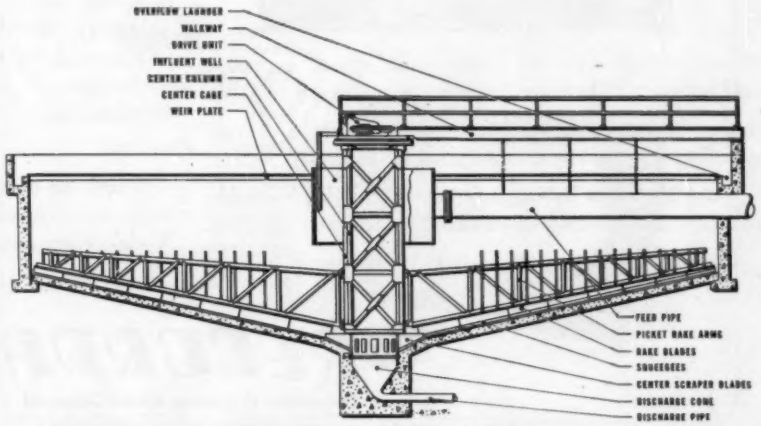
The pre-treatment mechanism most frequently used in the new system is the Dorrco Hydro-Treator, although some purification problems may call for either a Dorrco Clariflocculator or Dorr Clarifier. Raw water, filter effluent, sludge, backwash-water and backwash-drain flows are controlled by manual, hydraulic or motor-operated valves located in a valve house, adjacent to the purification unit.

Available as a complete assembly, the PeriFilter System can be designed into any water purification plant, and each unit includes a pre-treatment mechanism, filter bottom and sand, steel tanks and walkways, hydraulic valves, rate controllers, instruments and panel boards.

The second new unit for water-treatment plants, the Dorrco Hydro-Softener, provides continuous water softening through the medium of base exchange resin, a portion of which is continually regenerated with brine in a separate column, thus eliminating batch operation. One Hydro-Softener is designed to remove from 80 to 99% of the hardness, depending, of course, upon raw water characteristics and desired salt efficiency. An outstanding advantage of the Hydro-Softener is the uninterrupted production of treated water of constant quality, plus lower installation and operating costs.

Another valuable unit, this one for sewage-treatment plants, is the Dorrco Densludge Process for the continuous thickening of sewage sludge. It may be applied to both primary and secondary sludge treatment, and involves continuous withdrawal of sludges, and controlled thickening of the mixture in the Dorr Densludge Thickener. Using this process, sludge volume is decreased up to 50%, and digester supernatant liquor is eliminated, reducing digester heat requirements.

Complete information on the Dorrco Aldrich PeriFilter System and the new Dorrco Hydro-Softener for water treatment, plus the Dorrco Densludge Process for sewage plants is available from The Dorr Co., Stamford, Conn. Write directly, or you may use the Post Card on the colored page in this section Circle No. 798.



Digester capacity is increased some 50% by The Dorrco Densludge Process.

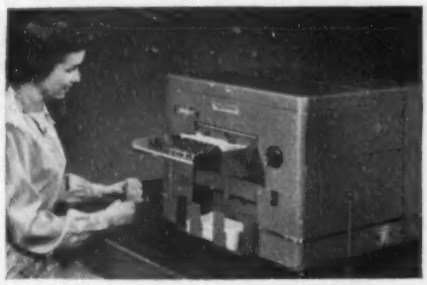
Famous for saving space and increasing protection but

Do you know its most important use today?

THIS may come as something of a surprise to you . . . but many government agencies—as well as thousands of companies—are now using Recordak Microfilming *primarily* to end costly manual record-keeping in their daily routines. *Routines which may be similar to some of yours.*

The way Recordak Microfilming cuts record-keeping costs as much as 85% is little short of amazing.

In just one minute a Recordak Bantam Microfilmer (below) will give you copies of more than 500 check-size documents or 250 letter-size ones. And each copy is photographically accurate and complete . . . yours for a fraction of a cent.



How does government utilize such speed, economy, and accuracy? Here are just a few examples—

Courts use Recordak Microfilming—instead of hand enrollers—to record complaints and decisions.

Vital Statistics Bureaus forward Recordak Microfilm copies, instead of typed records, to required agencies.

County clerks use Recordak Microfilming to copy judgments, liens, etc., which were formerly abstracted by typists.

Remember, too, in all such operations you automatically get space savings up to 99% and increased protection *as extra dividends.*

You should see a Recordak Systems Man soon! The chances are he can point to agencies of your type and size who are now using Recordak Microfilming most profitably. He'll also give you all the facts on the line of Recordak Microfilmers designed for all requirements, all budgets . . . and available on an attractive purchase or rental basis.

* * *

You'll be under no obligation whatsoever . . . just write to Recordak Corporation (Subsidiary of Eastman Kodak Company), 444 Madison Avenue, New York 22, N. Y.

"Recordak" is a trade-mark

RECORDAK

(Subsidiary of Eastman Kodak Company)

originator of modern microfilming—and its application to government routines

New Outboard Motor Offers Quick Start

Operator, attractive Diane French, shifts into high gear.

While the operator of this craft is clearly not a police official, the outboard motor powering her boat is ideal for police department emergency use.

Looking past the obvious distraction we see the new electric-starting Big Twin, a 25-hp outboard motor that will rush you to the scene of water accidents. To start this motor, the young lady simply touches a button located on the dash panel.

Designed by Evinrude Motors, 4339 N. 27th St., Milwaukee 16, Wis., the Big Twin is one of the company's newer models, featured recently at the Chicago National Boat Show.

Get full details by writing Evinrude Motors, or you may use the Post Card on the colored page in this section. Circle No. 801.

How Milwaukee County Checks Air Pollution

Before smoke can be adequately regulated, air pollution control engineers need tangible evidence of the amount of solids in the air. Then by testing the samples and checking the prevailing wind conditions, they can locate the main causes of pollution.

The Department of Smoke Regulation in Milwaukee County, Wis., uses a Hevi Duty Furnace to check airborne solids. Large jars, partially filled with water, glycerin and a fungicide are placed on roof-tops over two stories high at 70 "collecting points" throughout the county. The solids which fall into these jars are considered representative of air pollution at that area.

Each month the jars are collected and the contents filtered into crucibles, dried, then fired with a Hevi Duty Type 051PT laboratory furnace. Samples are weighed after filtering and drying, and again after ashing in the furnace at 750°C. The difference in weight gives the combustible content of the samples, while the residue provides the weight of the non-burnable matter.

When the samples have been weighed, results are expressed in terms of the amount of airborne solids deposited in a square foot per month for each of the 60 regular areas and some 10 special points currently being studied.

Cities interested in this low-cost, effective method for determining the amount of pollution in the air, can get complete details from Hevi Duty Electric Co., 4212 W. Highland Blvd., Milwaukee 1, Wis. Write for *Bulletin* 849, or you may use the Post Card on the colored page in this section. Circle No. 808.

Interested in Investments for Pension Funds?

Then you well know the exacting requirements of your job, and the need for investing assistance based on thorough understanding of those requirements. We are qualified to serve you. Our familiarity with the markets and with pension fund requirements is based on more than 50 years of specialization in bonds, notes and debentures. Our own large inventory and our active bond trading departments make available a diversity of quality bonds in quantity.

HALSEY, STUART & CO. Inc.

123 SOUTH LA SALLE STREET, CHICAGO 90 • 35 WALL STREET, NEW YORK 5

AND OTHER PRINCIPAL CITIES

To learn something of our qualifications for serving You...

send without obligation for this informative booklet discussing our large volume of underwritings, our experience, policies, services and facilities.

ELYRIA, OHIO Also SAVES MONEY WITH "Flexibles"

Like most typical cities which are careful with the taxpayers' money, Elyria, Ohio, chose "Flexible" equipment. Pictured is their modern "Flexible" SeweRoder which takes 9/10ths of the usual hard work out of cleaning sewers — works faster and permits "preventative maintenance" to be carried on due to low cost of operation — without interference by the weather. (Some cities report cleaning sewers for less than 2¢ per foot.) Seen in the picture from left to right are Walt Decker and John Hovis of the city council, Henry Ault, Mayor, Ralph Terry, Safety-Service Director, Art of the sewer crew, and George Carrick, Superintendent. This city knows that "Flexibles" are based on careful study of the problem, and that "Flexible" stands behind every sale — as it has for 20 years.

Write for our **FREE** *Catalog*

Flexible SALES CORPORATION

3786 Durango Ave., Los Angeles 34,

(DISTRIBUTORS IN PRINCIPAL CITIES)

AMERICA'S LARGEST LINE OF PIPE CLEANING TOOLS AND EQUIPMENT

FILTER SAND AND GRAVEL

Produced from an inland pit hence free from river contamination and foreign matter.

Shipment in bulk or bagged.

Many of the larger filter plants throughout the United States are equipped with our products.

PROMPT SHIPMENT

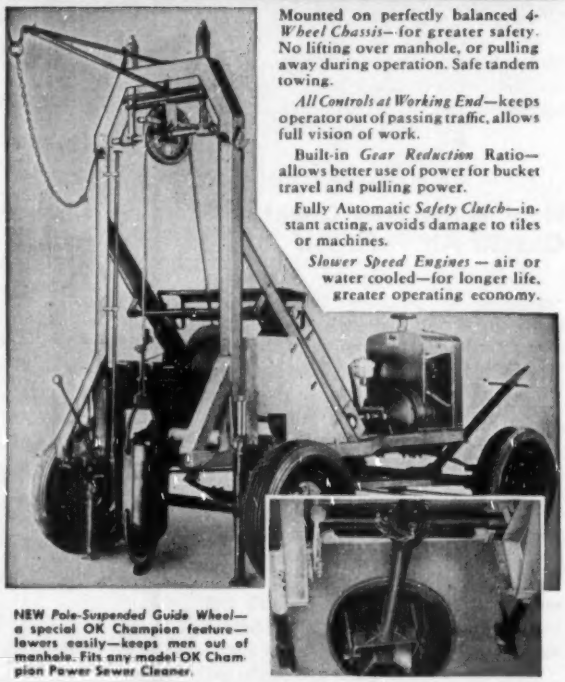
Inquiries and orders solicited.

NORTHERN GRAVEL COMPANY

Muscatine, Iowa

P. O. Box No. 307 Phone: 4261

OK CHAMPION POWER SEWER CLEANERS



Mounted on perfectly balanced 4-*Wheel Chassis*—for greater safety. No lifting over manhole, or pulling away during operation. Safe tandem towing.

All Controls at Working End—keeps operator out of passing traffic, allows full vision of work.

Built-in *Gear Reduction* Ratio—allows better use of power for bucket travel and pulling power.

Fully Automatic *Safety Clutch*—instant acting, avoids damage to tiles or machines.

Slower Speed Engines — air or water cooled—for longer life, greater operating economy.

NEW *Pole-Suspended Guide Wheel*—a special OK Champion feature—lowers easily—keeps men out of manhole. Fits any model OK Champion Power Sewer Cleaner.

Write for latest OK Champion Circular

CHAMPION CORPORATION 4716 Sheffield Ave. Hammond, Ind.

Crawler Tractor Celebrates 50th Birthday

Front-end loaders have become the "municipal handyman" in the past 20 years of their use. This one was clearing snow in Streator, Ill., back in 1933.

Leaders of many industries will pay homage to the crawler tractor this year, and to the men who originated and developed it. For 1954 marks the 50th anniversary of the first commercially successful track-type tractor; the forerunner of over 340,000 crawlers used in this country today.

The Caterpillar Tractor Co., Peoria 8, Ill., will conduct a special commemorative program during 1954. Its theme, "50 Years on Tracks," will trace the progress of the crawler tractor from its modest beginnings as a farm tool to its modern role as the nation's number one earthmover.

The crawler was first developed to fill the need for a unit with compact power that would ride high on the soft delta lands of California. Benjamin Holt, president of the Holt Mfg. Co., and Daniel Best, president of Best Mfg. Co., had been making steam traction engines since 1890, and in 1904 Holt removed the wheels from one of his standard steam models and substituted a pair of rough tracks. This

(*Continued on page* 191)

ROADMASTER
Street Sweeper
WIRE

High Scleroscope Rating
Uniform temper.

Specially processed for high fatigue — against breakage. Long wearing. Conveniently cut and delivered in 100 and 200 lb. boxes. Prompt shipment from stock of all standard sizes.

This gutter broom wire will prove an economy in your service.

"MORE MILES PER BRUSH"

JOHNSON
Steel & Wire Co., Inc.
WORCESTER 1, MASS.
New York Philadelphia Pittsburgh
Cleveland Detroit Akron Chicago
Atlanta Houston Tulsa
Los Angeles Toronto
A SUBSIDIARY OF PITTSBURGH STEEL COMPANY

THE EASIEST WAY to speed line marking on streets, highways, and parking areas is with the Mark-Rite Econo-Liner. It is easy to guide, easy to operate, easy to refill and easy to clean. Adjustable shields produce sharp, clear lines in any width from 2" to 6". Has a 5 gal. cap. tank. Free-floating paint guides follow the contours on brick, black top, concrete or any other surface. The Econo-Liner is simple to convert into a portable spray rig.

SEND FOR THIS CATALOG NOW! Get complete information about Econo-Liner. Write today!

UNIVERSAL MANUFACTURING & SALES CO.
5211 Pacific Blvd., Huntington Park 2, Calif.

Mark-Rite LINE MARKERS

In addition to serving as a 6,000-pound grader, the Maintainer can be equipped with hydraulic attachments for bulldozer, lift-loader, road planer, berm leveler, highway mower, broom, snow plow, patch roller and side dozer service.

Look What Typical Owners Say . . .

A MUNICIPALITY IN MAINE—"... performed jobs unbelievable for a machine of this sort. I can not laud too highly the work it has done."

A COUNTY IN MICHIGAN—" . . . This (Huber Maintainer) eliminated the use of a tractor and small grader and one operator with consequent savings in cost."

A CONTRACTOR IN FLORIDA—"They (Huber Maintainers) have earned us more money than any other piece of equipment we own."

A STATE IN THE NORTHWEST—"For the concrete pavement shoulder work which we are continually confronted with, the Maintainer has been a very satisfactory unit."

A TOWNSHIP IN PENNSYLVANIA—"The Huber Maintainer is tops with us (grading, loading, cleaning ditches, laying pipe)."

A CONTRACTOR IN CONNECTICUT—"Our Huber Maintainer has cut down our labor costs 50%."

HUBER MANUFACTURING CO. • **Marion, Ohio, U. S. A.**
Manufacturers of Huber Maintainers, Graders and Complete Line of Rollers

HUBER

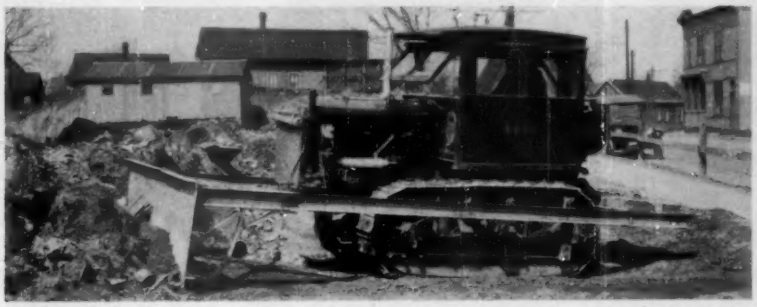
Purchasing News

(*Continued from page* 189)

track-type tractor underwent successful tests near Stockton, Calif., and through the years Holt continued to improve on the unit, adding a gasoline engine, and introducing an all-track model.

In 1908 Holt bought the Best Mfg. Co. from Daniel Best. However, two years later Daniel's son, C. L. Best, organized the C. L. Best Gas Traction Co., to manufacture gasoline driven wheel-type tractors. Best soon introduced the 75-hp Tracklayer, and competition between the two companies was at its strongest. In 1925 this competition ended when the firms merged to form the Caterpillar Tractor Co.

The track-type tractor has long been a key tool in roadbuilding, and during World War I, inspired the design of the first tank. The trend for present day models was set in 1931, when Caterpillar introduced the diesel-powered tractor. Today, the crawler is used on civil and military projects, on field and farm, and in deserts, forests and icelands.



Bulldozers have certainly seen a great deal of development since this outdated model went to work on a Milwaukee dump in the early 1920's.

LEADITE

The Pioneer Self-Caulking Material for C.I. Pipe

YOU CAN'T GO WRONG WITH

The pioneer self-caulking material for cast iron bell and spigot water pipe which, for more than 50 years, has shown water works men how well it makes a good tight joint that improves with age.

THE LEADITE COMPANY
Girard Trust Co. Bldg., Phila. 2, Pa.

No Caulking

SODIUM SILICOFLUORIDE

(Fluosilicate)

Inquiries Invited!

TENNESSEE TC CORPORATION
1028 Connecticut Ave., N. W.
WASHINGTON 6, D. C.

Catalite
REFLECTIVE
COMPOUND

mileage proved

dries in 6 minutes

weather proofed

Catalite
REFLECTIVE
COMPOUND
(Beads and Paint)
PREMIX REFLECTIVE TRAFFIC PAINT AT ITS BEST . .

EASILY APPLIED
—no bead dispenser necessary

See your nearest CATAPHOTE dealer—or, write

Cataphote CORPORATION
TOLEDO 10, OHIO

Kill the ROOTS and you kill the WEEDS!

DOLGE WEED-KILLERS, sprayed in economical solution, *work down to the roots* —the ONLY way of destroying noxious plant life.

NEW DOLGE N P WEED-KILLER

—Can be used with confidence by anyone. Kills **all** vegetation by contact and translocation to weed roots; sterilizes the soil. RESULTS APPARENT IN A FEW DAYS. Spray, sprinkle or **use as dry powder**—"built-in" wetting and spreading agent works **fast** by wetting waxy surfaces of plants and inducing penetration into leaves, stems, roots. Non-inflammable, non-volatile, non-corrosive.

DOLGE SS WEED-KILLER

—Where NO vegetation is desired . . . on walks, drives, areas close to buildings. Tends to sterilize the soil so that wind-blown seeds cannot germinate.

DOLGE E.W.T. 40-2, 4-D *SELECTIVE* WEED-KILLER

—**Will not harm good lawn grasses,** but kills dandelions, plaintain and other broad-leaved noxious plants in turf.

Write for Dolge booklet on chemical weed control, and see your DOLGE SERVICE MAN for practical weed control advice.

Ask about SOLEXTO
Kills grubs of turf insects —one application protects lawns for years!

Dependable DOLGE
WESTPORT, CONNECTICUT

NOW! SHAFT DRIVE POWER in LIGHT hauling!

TOTAL OPERATING COST ¾¢ PER MILE

- EXTRA POWER
- EXTRA CAPACITY
- EXTRA ECONOMY

Cushman SHAFT DRIVE 780 TRUCKSTER

Slash inner plant handling and delivery costs as have hundreds of other plants Put Cushman 780 TRUCKSTERS on your jobs—NEW this year with SHAFT DRIVE. Complete with 3 speeds forward, one reverse. Get the EXTRA power advantages of big vehicle shaft drive—plus quick, easy handling AND low operating cost—less than a penny a mile. With capacity up to 500 pounds, TRUCKSTER can speed up hundreds of jobs for you!

- Write for FREE illustrated booklet
- See Your Nearest Cushman Dealer for FREE demonstration
- SOLD and SERVICED NATIONALLY

CUSHMAN MOTOR WORKS, INC.
961 No. 21st St.
Lincoln, Nebraska

- GREATER ECONOMY
- DURABILITY
- SIMPLE APPLICATION
- BRILLIANCE OF COLORS
- NO TYING UP OF EQUIPMENT
- EXTRA LONG STORAGE

SEND US YOUR PROBLEM — OUR TECHNICAL ADVICE IS *FREE*

Ward's TRUCKSIGN TRANSFERS
8504 LYNDON AVE.
DETROIT 38, MICHIGAN
A DIVISION OF WARD'S NAME PLATES

Plywood Signs Cut Replacement Costs

Because "stop" and other traffic signs of resin-overlaid fir plywood can't be wrapped around the post by vandals and won't chip or rust when struck by rocks and bullets, Tacoma, Wash., is replacing all its existing signs with the resin-overlaid plywood units. According to R. E. Schmidt, Tacoma traffic engineer, some 4,000 of the new signs have been placed in service, two-thirds of them reflectorized. Replacement has moved forward most rapidly in areas where vandalism has been

Sturdy traffic sign on busy downtown corner is one of 4,000 made from resin-overlaid Douglas fir plywood now in service in Tacoma, Wash.

prevalent, and monthly sign requirements are dropping rapidly.

Made by Traffic Control Signs Company, 2909 S. Alaska, Tacoma, Wash., the blanks are ⅝-inch panels which are rounded off at the edges to quicken runoff. The resin-overlaid service, permanently fused with the plywood when laid up in the hot press, is the base for either enamel or reflectorized surfaces.

For full details on these durable traffic signs, write directly to the manufacturer, or you may use the Post Card on the colored page in this section. Circle No. 803.

No Smoking Chimneys

Cities today can be prosperous without having to tolerate black smoke pouring out of industrial stacks. The old saying "Cleaning bills and contaminated air are guarantees of regular pay checks," is as outdated as the old-fashioned steam locomotive.

This obsolete logic has met its match with air cleaners such as the Koppers Electrostatic Precipitator, manufactured by the Koppers Co., Inc., Metal Products Division, 200 Scott St., Baltimore, Md. Different types of these electrostatic cleaners are daily removing tons of solid and liquid matter from industrial gases and air.

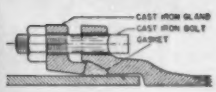
While understandably strict municipal ordinances have brought about the need for these cleaners, in most cases, the cleaning process has become secondary to the recovery of valuable products for re-use. The by-product recovery constitutes a new source of profit for industry, as well as winning public gratitude for cleaner and healthier community air.

Get full information on the Koppers Electrostatic Precipitator by writing directly to the manufacturer, or take advantage of the Post Card located on the colored page in this section. Circle No. 790.

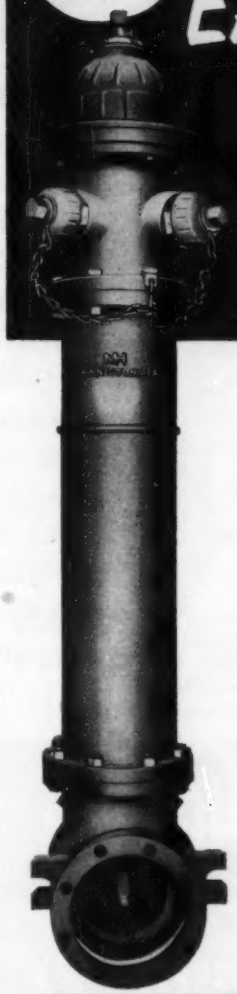
MECHANICAL JOINT HYDRANT

M H EASY to INSTALL

Saves Labor
Saves Time



Made-up Mechanical Joint cut away to show its design.



A. W. W. A.

The use of mechanical joints for pipe, valves and hydrants is growing rapidly. The reasons are easy assembly, saving in time and labor cost, and flexibility that maintains a tight, leak-proof joint under conditions such as pipe line expansion, contraction or settling.

M & H Mechanical Joint hydrant is standard compression type. The main valve opens against the pressure. Hydrant valve will remain closed in case hydrant standpipe is broken off in traffic accident. Other features include low friction loss, revolving head, dry top, easy lubrication. Hydrant shoe has two heavy lugs for use in strapping hydrant to dead-end pipe line.

M & H Mechanical Joints are made in accordance with A.S.A. standard specification A21.11, 1952, as approved by American Water Works Association, in which a thick gasket of triangular cross section is compressed by a bolted follower ring.

For complete information, write or wire M & H VALVE AND FITTINGS COMPANY, Anniston, Alabama.

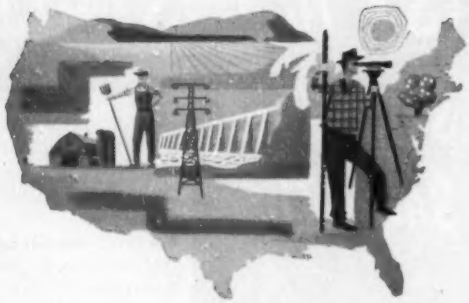
M&H PRODUCTS FOR WATER WORKS • FILTER PLANTS INDUSTRY • SEWAGE DISPOSAL AND FIRE PROTECTION

U. S. BUREAU

OF RECLAMATION

SPECIFIES

Concrete Pressure Pipe



When the U.S. Bureau of Reclamation builds a pipeline, it must last a long, long time.

This is why the Bureau has specified concrete pressure pipe in many projects under its jurisdiction throughout the Western States. In the State of California alone, approximately 3,000,000 feet of concrete pressure pipe have been used in diameters ranging from 12″ through 84″, and for heads up to 650 feet. These jobs include the Coachella Valley Project, the Cachuma Project near Santa Barbara, both barrels of the San Diego Aqueduct, and the Central Valley Project.

Large pipe distribution systems, often calling for heads of 200 feet and over, are jobs for concrete pressure pipe. So, when your city is planning a water transmission system with either low or high heads be sure to get the facts on concrete pressure pipe.

Member companies manufacture concrete pressure pipe in accordance with nationally recognized specifications

Concrete PRESSURE Pipe

WATER FOR GENERATIONS TO COME

AMERICAN CONCRETE PRESSURE PIPE ASSOCIATION

228 North LaSalle Street
Chicago 1, Illinois

Use a Tape Recorder to Stop Accidents

A potential traffic fatality and Chicago's police safety car which cruises daily in the Loop booming tape recorded messages to up to 350,000 pedestrians and motorists. The automobile, its Ampro tape recorder, loudspeakers and microphone—for "live" warnings from Officer John Hurkes—was obtained through the efforts of the Citizens Traffic Safety Board. It has been credited with helping to hold Chicago's New Year's Day traffic fatality toll to one person.

Chicago's safety-conscious police believe that the more you hear about safety and the louder the message, the less liable you are to become an accident statistic. A special tape-recorder-loudspeaker equipped cruiser driven by Officer John Hurkes, shouts such messages as these in the Loop's heavy traffic: "Ladies—please turn back and cross at the corner. Death is eternal but you wait only 30 seconds for the green light. Stop, look and live!" "Why be a jaywalker?—Wait for the light and live longer!"

Equipped with a tape recorder made by the Ampro Corp., 2835 N. Western Ave., Chicago, Ill., two loudspeakers, and a microphone hook-in for direct messages, the special car is a major part of Chicago's comprehensive police and civic safety education program.

It was obtained through the efforts of the Citizens Traffic Safety Board, and was a gift to the police department from the Metropolitan Ford Dealers of Chicago. More than 125 short, slogan-type messages are flashed each hour by the hour-length, 600-ft. tape which is rewound and played over and over again during the course of the day.

BRAXMAR BADGES

Standard Badges Since 1879

Write for catalog illustrating badges for Police, Fire and other City, County and State Officials
John O. Veit, Pres.

C. G. Braxmar Co., Inc.
216 E. 45th St., New York 17, N. Y.

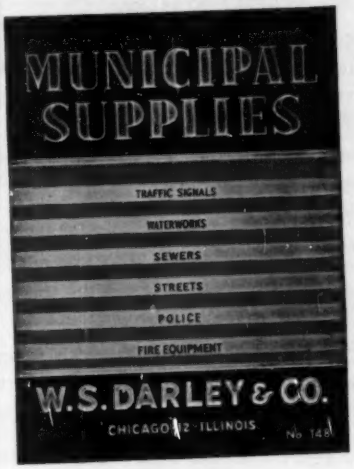
BURKE Exclusive! CLIMB-A-ROUND
PLAYGROUND EQUIPMENT
Complete line of playground, home, playschool play devices.

BURKE EXCLUSIVES
★ HOBBY-HORSE
★ GLIDER
★ CLIMB-A-ROUND

Write for special literature catalog, price list, booklet "Planning Your Playground" or specifications.

B B B
THE J. E. BURKE PLAYGROUND EQUIPMENT CO.
Factories at
FOND DU LAC, WISCONSIN
BOX 986, NEW BRUNSWICK, N. J.

NEW CATALOG!



WRITE TODAY For 100 PAGE MUNICIPAL CATALOG

W. S. DARLEY & CO.
CHICAGO 12

Every inch a fire fighter

Petaluma, California, is proud of these two new L-306 Internationals. Each has 169-inch wheelbase, pumping capacity of 1250 GPM. Both are radio-equipped, powered by 275-hp engines, with five-speed transmissions. The International hook-and-ladder in the background is a 1924 model, still in service.

Every International fire truck chassis is engineered two ways to fight fires better.

First, you gain from International's tough-job engineering. It has made International Trucks the heavy-duty sales leader for 21 straight years. That engineering gives you proved long life, lower maintenance cost.

Second, International fire truck chassis are specially designed to exceed every fire department requirement. They have flexibility, speed, and safety to spare.

You can choose from seven International fire truck chassis, with GVW ratings from 16,000 to 30,000 lbs. There are eight engines in the International fire-fighting line. Pumping capacities range from 500 to 1250 GPM.

Compare performance with other fire trucks. Compare price. Ask your International dealer or branch for more details.

INTERNATIONAL HARVESTER COMPANY • CHICAGO

To Keep the Big Red Ones Rolling. Chicago Fire Department uses two RM-150 Internationals with Metro® bodies for on-the-job maintenance. Body contains a complete repair shop, a stock of spare parts.

International Harvester Builds **McCORMICK®** Farm Equipment and **FARMALL®** Tractors . . . Motor Trucks . . . Industrial Power . . . Refrigerators and Freezers.

→ Get the News! Alex Dreier "Man on the Go," daily NBC Radio, sponsored by INTERNATIONAL Truck Dealers.

INTERNATIONAL® TRUCKS

"Standard of the Highway"

Purchasing

Does Your Loading More Easily

All three models of the Lessmann Loadall now incorporate hydraulic-power crowd, reports this company, so that whether you choose the HF-5, HF-10 or HF-15 Loadall, you are always assured easier loading. Heavy and compact material is quickly scooped up by a forward sweep of the bucket, which is independently operated by two heavy-duty hydraulic cylinders.

In improving the three models, the Lessmann Mfg. Co., 2008 Easton Blvd., Des Moines 4, Iowa, has removed the perforated grill and fabricated hood and replaced it with a cast grill with horizontal louvers, providing the front-end Vickers hydraulic pump assembly with greater protection. In addition, the three models may now be equipped with new steel cabs for safe, comfortable operation in any weather.

Full reversing transmission is standard equipment on the Model HF-15.

The HF-15 Loadall is 11½ inches longer and 1,200 pounds heavier than the HF-10, and is equipped with full reversing transmission; an optional feature on the two smaller models. A ¾-yd. loader, it can be equipped with buckets up to 1½-yd. capacity to handle bulky materials, and is available with such optional equipment as Bendix Hydro-Vac brakes and Vickers power steering.

For full information on all three models, address the manufacturer direct, or you may use the Post Card in this section Circle No. 784.

P. F. T. Moves Eastern Office

New Eastern office of the Pacific Flush Tank Co. is located in the Tyler Bldg., 225 Westchester Ave., Port Chester, N. Y., according to a recent announcement. The firm's main offices are at 4241 N. Ravenswood Ave., Chicago, Ill.

for a CLEAN SWEEP

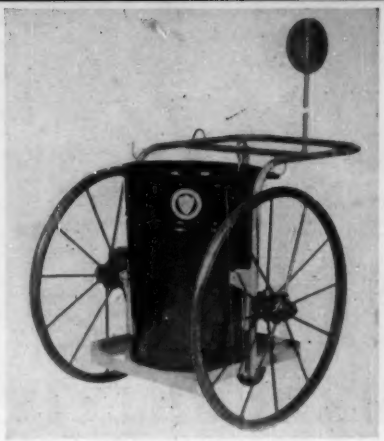
You know this is true: **only hand-pushed brooms get all the dirt.**

For dependable, economical **SERVICE** Tarco "Street Sweepers' Friend" Carriers are **BEST.**

Choice of STYLES: for a **single can** or for **two cans.**

Choice of large wheel TIRING: **pneumatic, solid rubber** or **plain steel.**

Balanced and free-running. Silent can clamp. Safety traffic-warning flag. Full swiveling castor wheels. Level lift sweeper scoop available.



No. 17 Carrier with H.D. Can

Your sweeper cart for years to come: a TARCO.

Other TARCO Products

"Scotchman" Spreader "Flash-Flame" Dryer

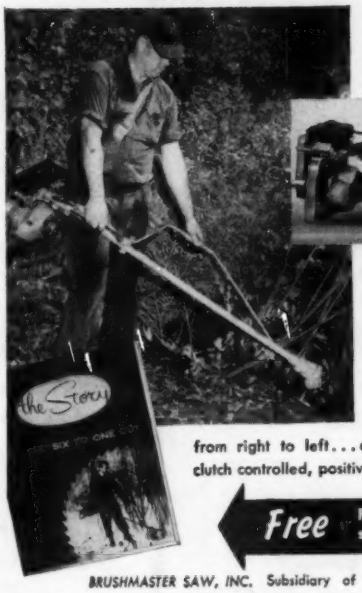
ALL-PURPOSE Sprayer

Asphalt Pouring Pots Street Refuse Cans

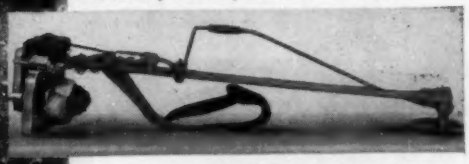
TARRANT MFG. CO., East Ave., Saratoga Springs, N. Y.

Booklet Reveals **HOW TO CLEAR BRUSH AT SIX-TO-ONE SAVINGS**

BRUSHMASTER



ONE - MAN - OPERATED, MOBILE POWER-DRIVEN BRUSHCUTTER IS FASTER, SAFER, MORE EFFICIENT



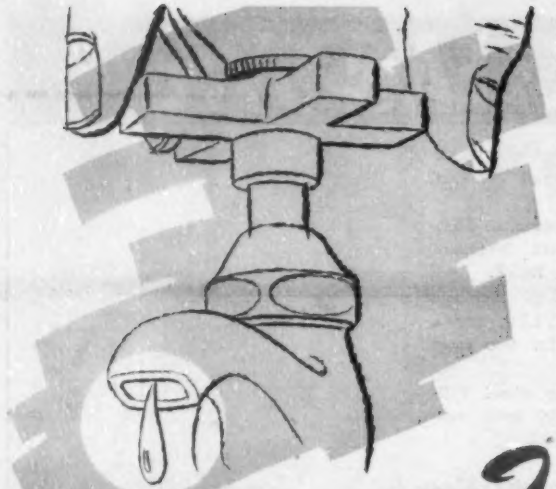
ONE MAN ACCOMPLISHES WORK OF SIX!

Your company should join the ranks of those saving up to 83% on right-of-way maintenance! Brushmaster cuts all brush . . . from matted grass to saplings up to 4" in diameter . . . cuts vines, briars, honeysuckle, thorns, etc. Operates freely from right to left . . . close to ground . . . or overhead. Vibration-free, clutch controlled, positive drive.

Free Fully illustrated, colorful booklet shows secret of six-to-one savings!

BRUSHMASTER SAW, INC. Subsidiary of *Harrington & Richardson, Inc.*, established 1871.

1284 EMERALD ST., KEENE, N. H.



DROUGHT 1954?

will **YOUR WATER** *supply*
be **ADEQUATE** *this year?*

Last summer, a RANNEY collector at Kirkwood, Mo., in the heart of the drought area, yielded 75 per cent of designed capacity, although the area stream flow and rainfall was 43 per cent below normal.

THIS IS PROOF THAT . . . .

the RANNEY supplies a huge volume of naturally filtered water, even under severe drought conditions.

The unique RANNEY, with its screened, horizontal well points that never clog, will produce more cool, pure water from one well for less money, than ever before possible.

before you **INVEST**
investigate the **RANNEY** *method*

Water Supply Engineers and Contractors

RANNEY

Method Water Supplies, Inc.

841 Alton
Columbus 19, Ohio

write for **FREE BOOK**

Please send further information on Ranney Water Collectors.

NAME

COMPANY

STREET

(CITY & STATE)

AC-4

FIRST

. . . and Best!

TODD INSECTICIDAL FOG APPLICATOR

TIFA

Successfully Used for over 9 Years in Community Fly and Mosquito Programs

Tifa was first in the field of fog applicators. Tests have proved it best in the field for space control around the community . . . on the dump, over pools, in suburbs, everywhere insects swarm!

This amazing machine discharges newly-developed insecticides as well as the older types in a true, clean fog which spreads quickly and permeates the deepest crevices. This ability means a better insect control program for your community. Put Tifa to work for you!

Efficiency Features

Uses insecticides in solutions, emulsions or suspensions.

Produces penetrating fog, dry or wet as you wish.

Droplet Control ranges from ½ to 200 Microns.

CARRYING
Underwriters' Listing Seal

Write for illustrated folder with full details and official comments.

COMBUSTION EQUIPMENT DIVISION
TODD SHIPYARDS CORPORATION
81-16 45th Avenue, Elmhurst 73, New York

Motor Grader Stars in New Color Film

Motor graders at work grading streets, piling snow and maintaining playgrounds in cities throughout the country, are featured in this new sound-color movie from the J. D. Adams Mfg. Co. The 20-minute film stresses the operating advantages of the machine, including its wide range of operating speeds, four reverse speeds up to 13 mph, and dual braking system for safe, easy stops.

"Creeper" gears in the grader's new constant mesh transmission permit operating speeds as low as ¼-mph, while natural driving overland is facilitated by a foot accelerator. Engines are rubber-mounted to eliminate vibration at the operator's platform.

Interested municipal officials can arrange for showings of the new movie by writing the J. D. Adams Mfg. Co., 217 S. Belmont Ave., Indianapolis 6, Ind., or use the Post Card in this section. Circle No. 789.

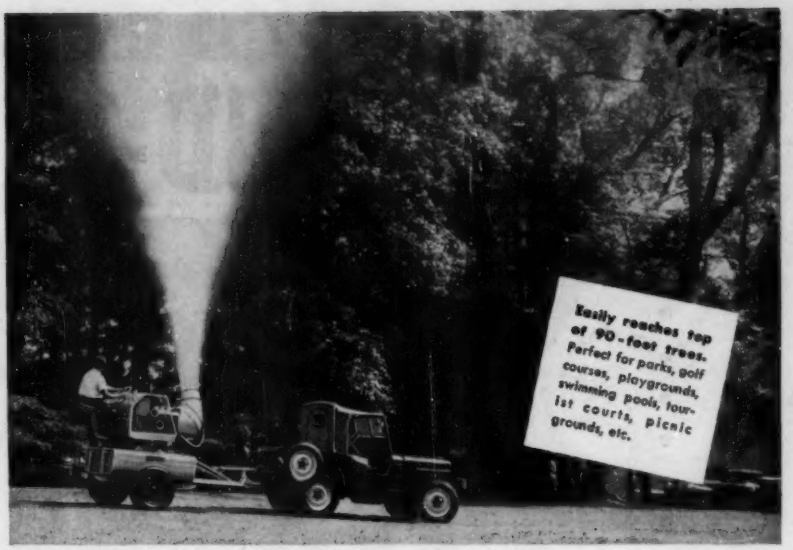
Protects Fire-Alarm and Airport-Lighting Circuits

Provide all your city's fire-alarm circuits, remote-metering circuits, relay- and airport-lighting circuits with adequate lightning protection with this new valve-type signal arrester made by the Line Material Co. Type L protects all AC circuits of 0-175 volts or DC

circuits of 0-30 volts. It furnishes consistent sparkover, high discharge capacity, and low IR drop.

Each Type L signal arrester consists of a precise spark gap and valve element in a clear plastic housing; all mounted on a strong Bakelite base. The arrester is made with a positive moisture seal.

Get additional information by writing the Line Material Co., 700 W. Michigan St., Milwaukee 1, Wis., or use the Post Card on the colored page in this section. Circle No. 788.


Easily reaches top of 90-foot trees. Perfect for parks, golf courses, playgrounds, swimming pools, tourist courts, picnic grounds, etc.

PROTECT trees, shrubs and grass with *IRON AGE* MIST SPRAYER

Users everywhere are praising the performance of Oliver Iron Age Mist Sprayers wherever insects and disease are a problem. For here's the greatest sprayer ever developed for effective, low cost pest control.

Just look at the outstanding features of this Oliver Iron Age Model 125. Rugged 22 hp, 4-cylinder Wisconsin engine drives sturdy cast aluminum axial flow fan at 87% efficiency, delivering 6,000 to 11,000 cubic feet of air per minute at 90 to 125 mph. Choice of Hypro 750 Pump for most solutions or, on model 125 EAP, a 5-gallon pump with mechanical agitation for wettable powders and abrasive liquids. Efficient spray jets meter *exactly* the right amount of mix, either oil or water, to center of high velocity air stream, insuring complete misting of concentrate. Spray jets can be changed quickly to alter droplet size. Turret size. Turret rotates 360° for full control of air blast.

Find out how Iron Age Mist Sprayers can make your shade tree preservation program *far more effective at less cost*. Mail coupon below for complete information.

IRON AGE MIST SPRAYERS give you these advantages:

- Greater community health and comfort
- Superior control of tree diseases, flies and mosquitoes
- More efficient use of power, materials, labor and equipment

OLIVER
IRON AGE
Finest in Farm Machinery

MAIL TODAY FOR FREE INFORMATION

THE OLIVER CORPORATION, Dept. 36, 400 W. Madison St., Chicago 6, Illinois AC-2

Gentlemen: Please send me information on Iron Age Mist Sprayers.

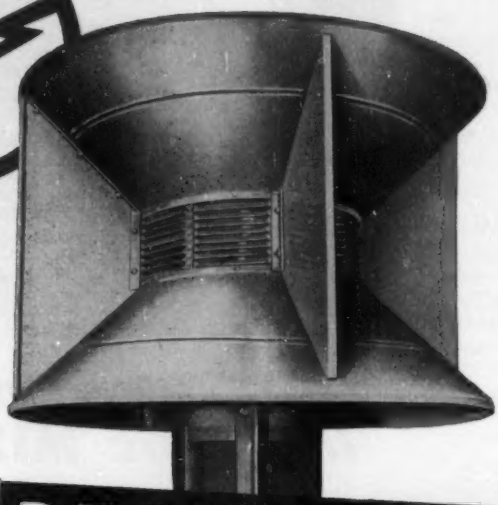
Name.....

Title.....

Address.....

City..... State.....

FEDERAL
SD-10



DUAL-TONE
AIR RAID WARNING SIGNAL

"All air raid sirens purchased under the 1954 matching-funds program for air raid warning devices must be dual-tone"

The Federal SD-10 siren is the new double tone version of Federal's STL-10 siren used so successfully by the City of St. Louis for air raid protection.

The SD-10's exterior features, modified to enhance the dual-pitch sound waves, conceal but do not eliminate any of its advanced principles of design. The SD-10 gives you greatly increased sound output without increased power consumption, more effective inverted design and simplified mounting. Truly a siren worthy of becoming a partner with other famous Federal Sirens designed for Air Raid applications.

The same Company—

The same quality products—

But, see our NEW name—

Write today for full facts -- ask for Bulletin No. 6

FEDERAL SIGN & SIGNAL CORPORATION

FORMERLY: FEDERAL ENTERPRISES, INC.

8756 S. STATE ST. CHICAGO 19, ILLINOIS

Purchasing

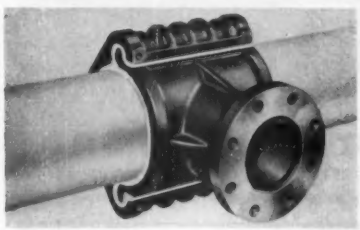
A Broom for Every Street-Cleaning Job

Sanitation officials are offered a variety of sturdy brooms designed to handle any cleaning job. These include over 50 municipal models for street, gutter and shoulder sweeping, with long trim brooms for working around high curbing. Palmyra stalks in 26-, 22-, and 18-inch lengths,hickory fiber in 26-inch lengths, and gutter broom wires in all popular sizes are available for power sweepers.

For heavy sweeping or for spreading gravel, the company features standard and special drag brooms made of palmyra stalks, African bass or flat steel broom wire.

Get a complete description of APB brooms and brushes directly from the American Push Broom & Brush Co., 617 Sansome St., San Francisco, Calif., or use the Post Card on the colored page in this section. Circle No. 800.

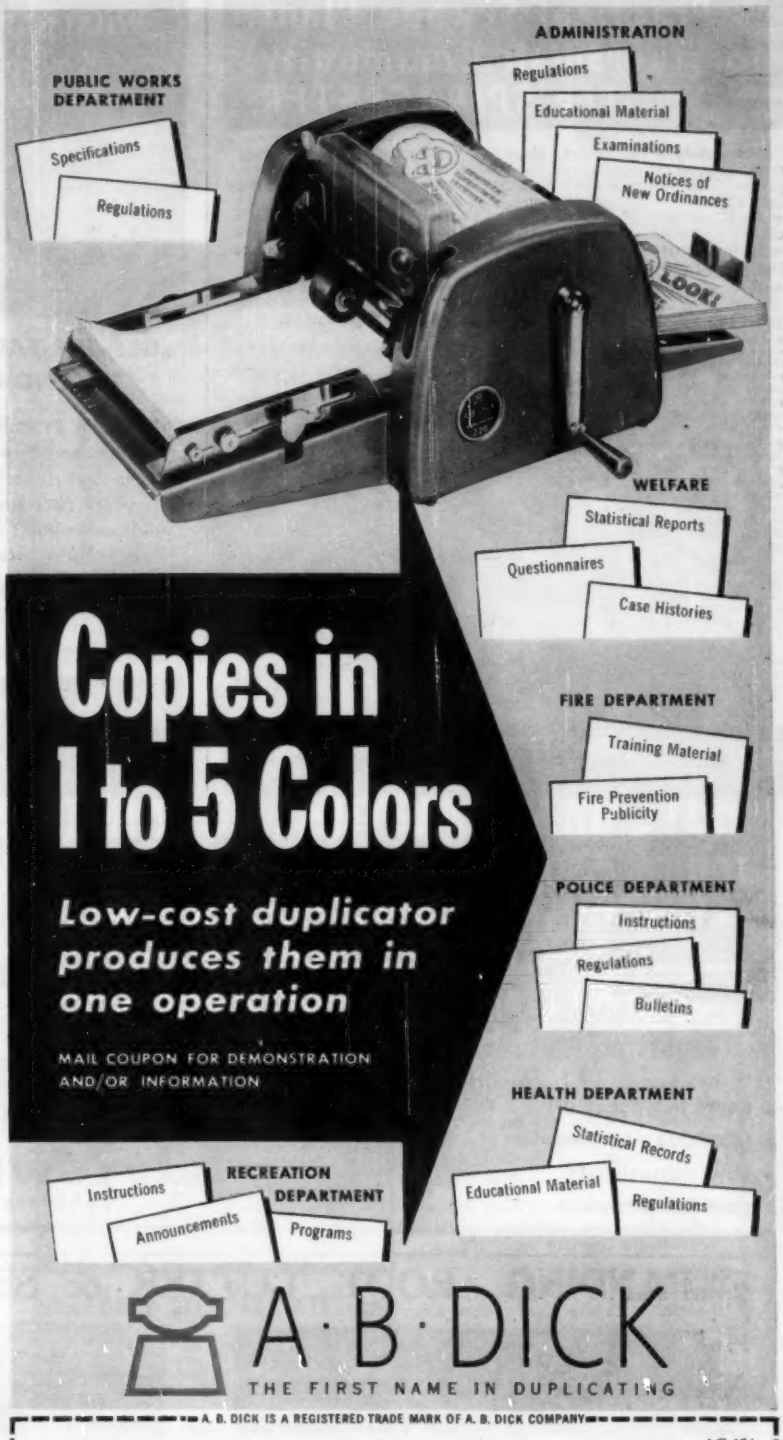
Boltless Tapping Sleeve Improves Water Service



A new boltless tapping sleeve, designed to outlast the pipe on which it is installed, is introduced by The Corey Mfg. Co. for use on cement-asbestos water pipe. Easy to install by unskilled workmen, the cast-iron sleeve requires less working area, greatly reducing excavation costs.

Corey's leak-proof tapping sleeves are water-tested in excess of 1,700 pounds, psi. They are available in a variety of tapped and flanged outlets for use in water and gas service.

Address The Corey Mfg Co., 3279 Verdugo Rd., Dept. 28, Los Angeles 65, Calif., or you may use the Post Card in this section. Circle No. 795.



A. B. DICK IS A REGISTERED TRADE MARK OF A. B. DICK COMPANY

AC-454

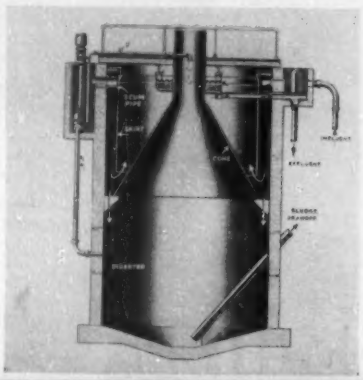
A. B. DICK COMPANY
5700 Touhy Avenue, Chicago 31, Illinois
Without obligation:—
( ) Arrange demonstration for new, low-cost duplicator
( ) Send information about new, low-cost duplicator

Name_____ **Position**_____
Organization_____
Address_____
City_____ **State**_____

A Practical Sewage Plant for the Small Community -The SPIRAGESTER

The Lakeside Spiragester gives the small community a sewage treatment plant combining the best in engineering with bargain prices. It provides a self-contained plant that your community can afford.

- **It is simple**—It places Lakeside's Spiroflo Clarifier over a digestion tank. It combines the simplicity of an Imhoff tank with flexibility and control that no Imhoff tank has. Note the drawing below.
- **It is engineeringly sound**—Operating on proved principles of clarification and separate sludge digestion. You aren't risking your community reputation with an untried experiment.
- **It is easy to operate**—you don't need a doctor's degree in biochemistry to make it perform. There are no intricate expensive mechanisms to get out of order.
- **And it is farsighted**—When your community grows, as it surely will and you have to build a larger plant, you can put a floating cover on the Spiragester and turn it into a digestion tank, and then use our Spiroflo Clarifiers for separate primary settling. Get the full story of the Spiragester by writing today for Bulletin 124. Incidentally, if you have a larger plant that needs improvement, our engineering department will be glad to help you without obligation. Just drop us a note.



LAKESIDE ENGINEERING CORPORATION
222 W. Adams St. Chicago 6, Ill.

GET THE FACTS with a *TRAFFIC CONTROL DENOMINATOR!*

The flow of traffic may be smooth and well-regulated when approaching and going through a tunnel...but does it cause bottlenecks elsewhere? To prevent such hazardous situations you must know —How many? What direction? What type?—For the simple, economical and accurate solution—

Use the *TRAFFIC CONTROL DENOMINATOR!*

Now being used in hundreds of municipalities in the United States. For details write Dept. AC-9.

THE *Denominator Company*, INC.
261 BROADWAY, NEW YORK 7, N. Y.
Manufacturers of Tabulating Machines for 40 years

TOWER CUSTOM BUILT SWIM POOL

"T" SHAPE ALL STEEL POOL DESIGN PROVIDES
Greater Efficiency and Safety..... A Packaged Installation

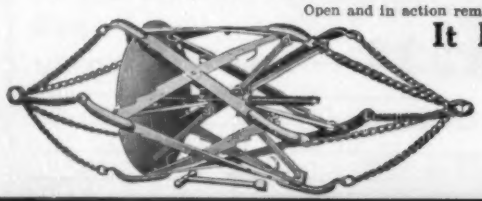
- **RAPID INSTALLATION**
- **INDIVIDUAL STYLING**
- **LOW INITIAL COST**
- **LOW MAINTENANCE**

WRITE FOR LITERATURE

TOWER IRON WORKS
60 BORDEN STREET, PROVIDENCE, RHODE ISLAND

EXPANDING ROOT CUTTER & SEWER CLEANER

Open and in action removing roots and caked sediment like this.



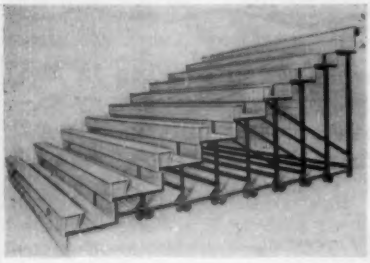
It Fits in on Every Sewer Cleaning Job
Adjusted in 30 seconds to fit any sewer from 8 to 30 inches.

Will clean the entire sewer wall, top, and sides as well as the bottom, cutting and removing the roots and caked sediment, putting the sewer system in almost 100% clean condition.

Write for our new catalog on complete sewer cleaning equipment.

EXPANDING SEWER MACHINE COMPANY
108 East Walnut St. Nappanee, Ind.

"Roll-Out" Bleacher Saves Space



New, low-cost "Roll-Out" gymnasium seats are safe and comfortable.

While many school gymnasiums and public auditoriums are in real need of increased seating capacity, few can spare the necessary floor space.

An effective solution to this problem is to install the new "Roll-Out" bleacher, recently introduced by the Hussey Mfg. Co., 546 Railroad Ave., N. Berwick, Me. Operated by one person, this stand rolls in and out like a ball, yet is so firmly constructed that collapse is impossible. The stand has a safety factor of more than four times the normal load. It features a fully enclosed deck that prevents waste from collecting under the stand, thereby eliminating a fire hazard and reducing cleaning time. This same deck spares the spectator the inconvenience of crawling under the stand to recover articles accidentally dropped.

A free folder giving complete details and specifications of Hussey Roll-Outs is available from the manufacturer. Write directly, or use the Post Card in this section. Circle No. 786.

Aligns Generators Optically

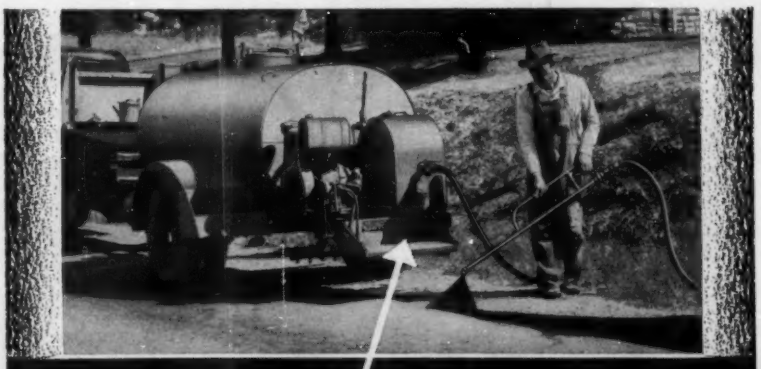
A new method of aligning generators, turbines, shafts, and bearings by means of optical instruments has been developed by the Farrand Optical Co., Inc., Bronx Blvd., and E. 238th St., New York 70, N. Y.

Electric light and power plants are frequently confronted with breakdowns of turbine generator units which often involve major overhauls. When this occurs, it is necessary to dismantle the turbine case and remove the entire rotor unit in order to repair or replace damaged parts; then to realign the turbine shaft to the generator shaft and finally to reassemble the unit.

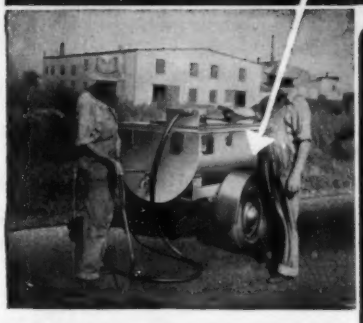
The mechanical method of aligning turbine or generator shafts is to use a taut stretch of piano wire between centers of fixed bores. This is a laborious, time-consuming and frequently inaccurate process.

The new optical system establishes a straight line of sight by training an alignment telescope on a target reticle through the bearing bores of a turbine. Many of the mechanical method's problems are eliminated when working from an optical center line which, unlike wire, never sags, never gets out of shape, and is never rendered inaccurate by thermal effects. Actual tests show savings of 50% or more with the new technique.

A comprehensive bulletin, *No.* 815, contains full details about the method, and lists instruments and accessories. Write directly to the manufacturer, or take advantage of the Post Card on the colored page in this section. Circle No. 797.



TEAM UP THIS STANDARD STEEL S-J WITH A STANDARD STEEL TAR KETTLE FOR LOW COST ROAD MAINTENANCE!



STANDARD STEEL TAR KETTLES

✓ You get three separate operations from Standard Steel Tar Kettles. (1) Hand operated spray assembly; (2) Motor operated, and (3) Gravity Draw off for bucket work. Uniform heat throughout mass of material eliminates "cold spots" or "burnt materials." Team up an "S-J" and a Standard Steel Tar Kettle and you can handle any repair work or secondary construction at less cost—less work—with less investment in equipment. Write for Catalog "TK".

STANDARD STEEL "S-J" for SECONDARY CONSTRUCTION

✓ Whether used for construction of playgrounds, driveways, parking areas, or for patching, sealing, shoulder repair or crack filling, Standard Steel "S-J" works fast—economically—efficiently.

SAVES WORK — a special "SUCK BACK" element cleans spray bar instantly after shutting off flow of material.

NO DELAYS STARTING — pump and entire piping system is instantly drained after completing a job — eliminating freezing and loss of time on *starting next job.*

SAFETY — Gravity Draw off on curb side protects operator.

Write for Catalog "S-J" for Further Details

OTHER PRODUCTS

Asphalt Pressure Distributors, Patch Rollers, Supply Tanks, Tool Heaters, Asphalt Tools, Street Flushers, Construction Brooms and Aggregate Spreaders.

Built to the Highest Standard

Standard Steel Works NORTH KANSAS CITY, MO

SJ6

CITY OF SPOKANE

SPOKANE 8, WASHINGTON

Mr. William Roesing, Division Manager
Accounting and Adding Machines
Underwood Corporation

Dear Sir:

Underwood Sundstrand billing machines have been in service in the Water Division continuously for fifteen years and we are very enthusiastic about their efficient performance. The flexibility of these machines has made it possible to fulfill every requirement of our system of bookkeeping.

Very truly yours,

Elmo James

Elmo James
Superintendent of Water

from the

SPOKANE WATER DEPARTMENT

UNDERWOOD SUNDSTRAND
Accounting Machine

Two Underwood Sundstrands handled the 31,000 accounts back in 1938 and another machine was added in 1950, and the three are now billing and posting to over 47,000 accounts. In addition to the billing operation and the posting of cash receipts they are also used to post miscellaneous charges, claims and refunds, and labor and material bills.

•

This is a machine built specifically for accounting . . . to give satisfaction on any and every accounting operation. Let Underwood Sundstrand machines help simplify and speed your municipality's billing and accounting work.

•

UNDERWOOD

UNDERWOOD CORPORATION

ONE PARK AVE., NEW YORK 16, N. Y.

Send me information on the Underwood Sundstrand machine for
☐ utility billing ☐ tax billing and posting ☐ budget ☐ payroll ☐ inventory

Name .....
Title .....
City ..... State .....

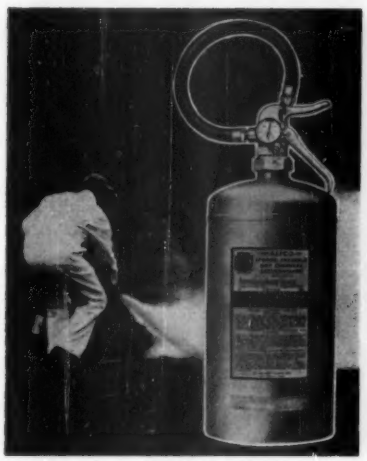
Atlas to Conduct Courses in Corrosion

Water and sewage officials, city engineers and others interested in learning more about corrosion and how to combat it, are offered two sessions of instruction this year by the Atlas Mineral Products Co.

Each course is expected to last one week, and will stress the selection, design, testing and application of plastic construction materials. Exact dates and other pertinent information will be sent by Joseph A. Snook, Vice-President, Atlas Mineral Products Co., Mertztown, Pa.

In addition to courses in corrosion, Atlas is offering a new 50-page booklet with detailed information on protective coatings. Copies may be secured by writing the manufacturer directly, or you may use the Post Card located for your convenience on the colored page in this section. Circle No. 780.

Stops Fires Faster



Model PDC-20.

Speed, the most important factor in effective fire-fighting, is assured with the new line of air pressurized Alfco dry chemical fire extinguishers. These units are ready to work the instant fire hits. You simply pull the pin and squeeze the lever. There are no complex gadgets to operate; no last minute pressurizing from a gas cartridge or cylinder to detain you.

A newly designed Alfco discharge nozzle fans the dry chemical outward and downward in a wide pattern with great density. The discharge pattern is kept uniform by 150 (plus 25 minus 0) psi. air (or nitrogen) pressure. When partially operated, these extinguishers can be left standing without loss of air pressure for any possible reflash of the fire.

Added to the new line of extinguishers is the Alfco dry chemical valve, equipped with a safety relief valve. The complete valve and siphon tube assembly may be removed as a single unit for recharging. Both are watertight, and both are designed to resist corrosion.

Four models make up the new line, PDC 5, 10, 20 and 30. The model number designates the extinguisher's dry chemical capacity.

For a full description of Alfco dry chemical fire extinguishers, write the American-LaFrance-Foamite Corp., Elmira, N. Y., or you may use the Post Card on the colored page in this section. Circle No. 792.

I LIKE A FOOLPROOF DESIGN— GIVE ME MATHEWS
AND DON'T FORGET YOU CAN REPLACE A BROKEN MATHEWS WITH A NEW BARREL IN A FEW MINUTES
MATHEWS ARE TOPS FOR EFFICIENCY IN SERVICE
FD

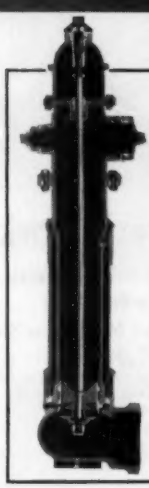
MATHEWS Means Dependable Hydrants

LONG LIFE. Mathews Hydrants have bronze parts at critical points—corrosion, rust and wear are thoroughly licked.

TROUBLE-FREE. The stuffing box plate, cast integral with the nozzle section, provides a positively leak-proof construction — water, sediment and ice cannot interfere with operating thread.

LOW-COST MAINTENANCE. Only one point requires lubrication—and that only during routine inspections.

REPLACEABILITY. A Mathews leveled in an accident can be replaced without excavating and in a jiffy. Community fire protection is interrupted only for a few minutes.



The Mathews includes every quality feature . . .

Compression type valve to prevent flooding • Head turns 360° simply by loosening bolts • Replaceable head • Nozzle sections easily changed • Nozzle level can be raised or lowered without excavation • Protection case of "Sand-Spun" cast iron for strength, toughness, elasticity • A modern barrel makes an old Mathews good as new • Mechanical-joint pipe connections as needed

MATHEWS HYDRANTS

Made by R. D. Wood Company

Public Ledger Building, Independence Square, Philadelphia 5, Pa.

Manufacturers of "Sand-Spun" Pipe (centrifugally cast in sand molds) and R. D. Wood Gate Valves

NO "CRYSTAL BALL" NEEDED

Detectron "505"

PIPE DETECTOR

Takes all guesswork out of Pipe Detection

A crystal ball might be one way to locate buried pipe or cable at an excavation site. But . . . a *better, safer* and *more efficient* way is to use the new, improved Detectron "505" that accurately pinpoints the exact length, depth and location. *Stop guessing —and be sure!*

- DETECTS, TRACES and CENTERS PIPE, CABLE, ETC.
- ESTIMATES EXACT DEPTH
- SEPARATES PARALLEL PIPE, CABLE and CONDUIT

Send today for FREE Catalog No. 54

THE Detectron CORPORATION

5420 VINELAND AVE., NO. HOLLYWOOD, CALIF.

are you going to be stumped by a stump?

when you can remove the average stump for less than $25.00 from your city . . .

without disturbing underground cables, pipes, wiring, sidewalks, lawns, or traffic. The O'Brien Stump Cutter, perhaps adaptable to your present tractor, is capable of removing 5 to 8 stumps per day . . . depending on size, conditions, etc. One owner is removing stumps at the rate of 1,000 per year. With the ever increasing tree blights necessitating costly removal, it will pay you to investigate the O'Brien Stump Cutter.

WRITE FOR COMPLETE INFORMATION NOW!

Manufactured and Sold Exclusively By

Metal Parts Machining Corp.

WATERVLIET NEW YORK

NEW FLORLINE

Street, Safety, Parking Lines

At Walking Speed. Now With Third Wheel Guide for Fast Straighter Lines At No Extra Cost! **$97.50** F.O.B. Detroit

Communities coast to coast are cutting maintenance costs of traffic and parking lines with FLORLINE. The new third wheel, 18" forward of carriage, keeps machine "in line" long before marking begins. Guide wheel arm automatically folds back at curb, lets machine mark right up to barriers

1 man, 1 hand operation. No attachments. Gravity feed. Makes curved, straight, continuous or skip lines. 2, 3, or 4" wide with interchangeable carriages. Holds 1½ gals. paint, lacquer, whitewash. Cannot spill. Portable, easy to clean and store. FULLY GUARANTEED.

H. C. SWEET CO.

24396 West 7 Mile Rd. Detroit 19, Mich.

New O'Brien SEWERKING, equipped with solid rods.

TWO MACHINES IN ONE!

Now—save money on sewer-cleaning equipment!

Here's the new O'Brien SEWERKING that can be used with flexible steel cable or solid rods! With this new machine, you can handle more sewer jobs—without paying for expensive, big machines. O'Brien SEWERKING is easy to operate; has a powerful, reversible electric motor (or can be used with gasoline engine) that turns cutting knives and cable to quickly clear line of roots. mud, etc. Cleans lines up to 14" in diameter, 500 feet long. Safe operation—no hand feeding of cable necessary.

WRITE TODAY FOR FREE BOOKLET

O'BRIEN Manufacturing Company

Dept. AC-4
5663 Northwest Highway
Chicago 30, Illinois

Purchasing News

New Two-Inch Centrifugal Pump

Operators of the 10,000-gph model 2PN Jaeger "Sure Prime" centrifugal pump are often able to get a vacuum of as much as 28 inches at the intake.

Working under average pumping conditions, the new 10,000-gph model 2 PN Jaeger "Sure Prime," is said to pump all the water that can be pulled through a 2-inch suction line. It delivers its full rated capacity of 10,000 gallons while operating at speeds as low as 2,400 to 2,550 rpm.

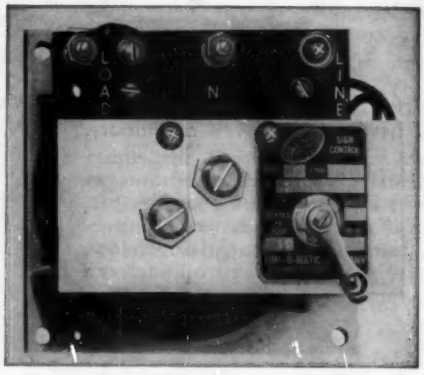
Lightweight, the model 2 PN stands some 24- x 21- x 26 inches high on 13-inch diameter pneumatic tires, and is powered by a Wisconsin AKN engine, delivering 5.3-hp at 2,500 rpm. The pump includes such features as combined inherent and jet priming, a self-cleaning shell of 20% steel, and positively lubricated shaft seal.

Catalog P-4 describes the new "Sure Prime" in detail. Write the Jaeger Machine Co., 505 Dublin Ave., Columbus 16, Ohio, or you may use the Post Card in this section. Circle No. 809.

FLASHERS

For All Types Flashing Signals

- FLASHING STOP SIGNS
- LOADING ZONES
- WARNING BEACONS
- TRAFFIC ISLANDS
- SAFETY ZONES
- BRIDGE ABUTMENTS
- CAUTION SIGNALS
- DETOURS



Small, ruggedly and compactly constructed. Will operate in any position. Is not affected by extreme variations in temperature. Driven by slow speed induction disc motor. Bakelite cam actuates coin silver contacts. Flashing speed 50 to 60 F.P.M. Easily adjusted in field. Proven dependability for over twenty years. Available with or without built-in radio interference eliminators.

TIME-O-MATIC CO.

1100 BAHLS ST. DANVILLE, ILL.

Unsurpassed in Design, Safety and Performance

The *plus* factor makes American the most respected name in playground equipment. *Plus* in design—American leads the field. *Plus* in performance—stronger, more ruggedly built for lifetime repair-free service. *Plus* in safety—American craftsmen are aware of their responsibility for safety of your children. Thus with American you get far superior design, unexcelled performance and unmatched safety.

American Streamlined Extra Heavy Duty Park Bench

All-American Picnic Grill Portable or Stationary

An American DeLuxe Combination Unit

Official Regulation One-Meter Unit

Send for Literature

AMERICAN

PLAYGROUND DEVICE CO.

ANDERSON, INDIANA

WORLD'S LARGEST MANUFACTURERS OF FINE PARK, PICNIC, PLAYGROUND, SWIMMING POOL AND DRESSING ROOM EQUIPMENT

One Sherman Power Digger Does the Work of *Ten* Men!

The problems of working restrictions caused by limited headroom and closely-spaced columns were solved when this Sherman Power Digger was used to dig trenches for sewer and electrical connections in the basement of the new Oakland Hospital in Royal Oak, Michigan.

In a race against winter, it was decided to pour concrete for upper floors and postpone the basement digging. When trenching could be started, the tractor-mounted Sherman Power Digger was lowered by crane through a small areaway into the basement.

With a single operator, the machine dug a criss-cross pattern of trenches totaling 1500 feet, in hard, dry clay, in just 30 hours. Subcontractor Robert Patton, owner and operator of the digger, estimates that the same digging by hand would have required 320 man-hours.

Thus, even on jobs where it is expensive, impractical, sometimes *impossible* to use heavy equipment . . . Sherman gives you all the advantages of power digging! The Sherman Power Digger is compact, flexible, highly maneuverable . . . gets in and out of tight spots easily . . . moves from job to job at top tractor speeds. Initial cost is surprisingly low, and maintenance is simple and inexpensive. Get all the facts on Sherman Power Diggers now. Write for free literature D53 without obligation.

Designed, Engineered and Manufactured Jointly by
SHERMAN PRODUCTS, Inc.
Royal Oak, Michigan
WAIN-ROY CORPORATION
Hubbardston, Mass.

•

Patent No. 2,303,825
Other patents pending

© SHERMAN PRODUCTS INC., 1954

Sherman
PRODUCTS, INC.
ROYAL OAK, MICHIGAN

Sherman SP Products

Purchasing

Cuts Car and Truck Costs

Municipalities are offered the McCulloch Fuel Flow Meter, a new device that will measure and immediately report to the driver the gasoline consumption of an automobile or truck engine to 1/100th of a gallon. It weighs less than three pounds and is manufactured by the Rhodes-Lewis Co., a subsidiary of McCulloch Motors Corp. of Los Angeles, Calif.

The Fuel Flow Meter consists of a small meter attached to the engine between fuel pump and carburetor, which sends 800 electrical impulses per gallon to a gallon counter mounted on the instrument panel. This gallon counter measures fuel consumption up to 1,000 gallons, and then repeats. It is useful in establishing the exact amount of gasoline used per trip and the amount left in the tank. In addition, it checks engine performance and encourages economical driving habits.

Municipal departments operating fleets of cars and trucks can get full information on the new McCulloch Fuel Flow Meter by writing the Rhodes-Lewis Co., 6151 W. 98th St., Los Angeles 45, Calif., or take advantage of the Post Card located for your convenience on the colored page in this section. Circle No. 793.

A Handy New Pump for The Maintenance Crew

Modern automotive-type design is being employed by Rice Pump and Machine Co., Belgium, Wis., to reduce bulk and weight in its new line of diaphragm pumps, making them especially well suited for use by municipal water, sewerage, and street-maintenance crews.

These pumps are powered by air-cooled gasoline engines or electric motors, and are available in 2-, 3-, and 4-inch sizes, with wheelbarrow, two-wheel, or base mounting. They include totally enclosed geared speed reduction cases to keep out dirt and water. The gears have cut helical teeth, operate in a bath of oil and turn on ground shafts and needle bearings.

A complete description of the new line of diaphragm pumps is contained in a new 4-page bulletin from Rice Pump and Machine Co. For your copy, write the manufacturer direct, or you may use the Post Card located for your convenience on the colored page in this section. Circle No. 814.

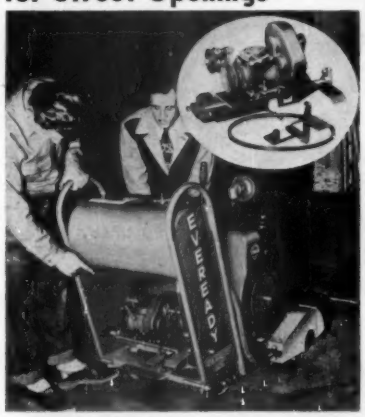
Makes Diesel Engines Purr Like Kittens

Resinous sludge, gum and varnish in diesel supply tanks need not hamper the great efficiency of diesel engines, according to The Shaler Co., Waupun, Wis. Many constituents not completely combustible, including sulphates, minerals and ash, which combine to form a great part of the hampering deposits in engine combustion areas, can be eliminated with Shaler's new Multi-Purpose Additive for diesel fuel oils.

The additive is not a lubricant. It serves as a detergent, dispersant and solvent to aid in preventing and eliminating sludge formations, gum and varnish in the fuel supply. It insures free action of compression and oil rings and produces additional action in the combustion chambers at peak temperatures, acting on the unburnables in the fuel, such as sulphates, minerals and ash. It aids in keeping these unburnables in finely divided particles and separated until they leave the combustion chamber.

For full information, write The Shaler Co., or you may use the Post Card in this section. Circle No. 811.

Cuts Concrete for Street Openings

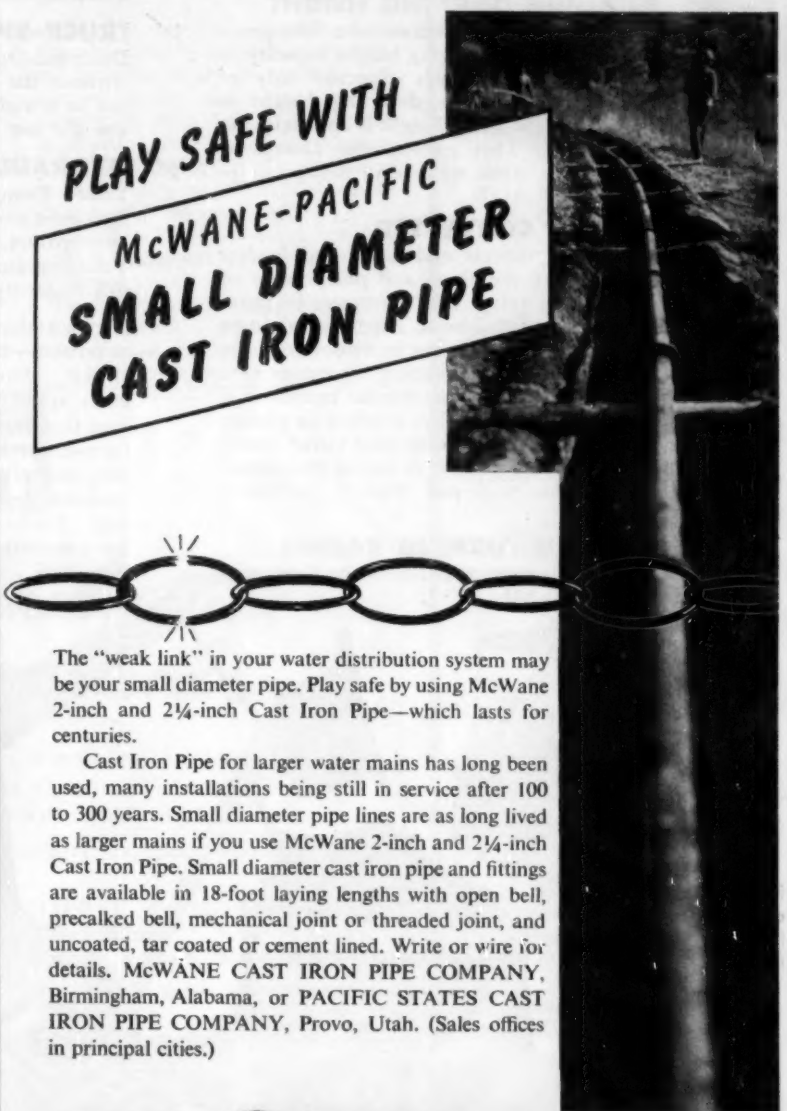


A touch of the foot lever and the new saw is quickly engaged. Insert shows completely assembled Eveready "Powr-Drive" Kit, available for speedy installation on any Eveready concrete saw.

Detailing the advantages of a self-propelled concrete saw, the Eveready BrikSaw Co., stresses longer blade life, less work for the saw operator, and increased cutting footage per day. This company has designed the new "Powr-Drive" saw, a self-propelled unit that moves forward at a controlled speed, and is quickly engaged or disengaged by foot-lever control.

No larger than conventional models, the "Powr-Drive" concrete saw offers straight, accurate cutting, and works especially well sawing large-scale contraction joints for streets and highways. The unit utilizes "Hydra-Eze" blade control, which lowers and raises the blade hydraulically, eliminating twisting and binding in the cut. A floating action undercarriage is used to prevent twisting and binding when the saw is moving over uneven or broken surfaces. Both features will prevent excessive wear of the diamond blade.

Sawing concrete and asphalt with this new self-propelled saw is described and illustrated in literature from Dept. 313, Eveready BrikSaw Co., 1509 S. Michigan Blvd., Chicago 5, Ill. Write directly, or you may use the Post Card on the colored page in this section. Circle No. 794.



The "weak link" in your water distribution system may be your small diameter pipe. Play safe by using McWane 2-inch and 2¼-inch Cast Iron Pipe—which lasts for centuries.

Cast Iron Pipe for larger water mains has long been used, many installations being still in service after 100 to 300 years. Small diameter pipe lines are as long lived as larger mains if you use McWane 2-inch and 2¼-inch Cast Iron Pipe. Small diameter cast iron pipe and fittings are available in 18-foot laying lengths with open bell, precalked bell, mechanical joint or threaded joint, and uncoated, tar coated or cement lined. Write or wire for details. McWANE CAST IRON PIPE COMPANY, Birmingham, Alabama, or PACIFIC STATES CAST IRON PIPE COMPANY, Provo, Utah. (Sales offices in principal cities.)

McWANE PACIFIC PIPE *Lasts for Centuries*

Check these Profit making Features of the NEW...

DEMPSTER DIGGSTER® GRD-101

✓ **NEEDS NO WHEEL TRACTION**
Loading of the bucket is accomplished by the exclusive Hydraulic Crowd and Hoist power of the Dempster-Diggster.

✓ **MAXIMUM DUMPING HEIGHT**
This is important because the Dempster-Diggster has the digging height capacity to handle jobs oftentimes expected only of power shovels. The dumping height is 9′6″ and the digging height is approximately 15 feet. This enables the Dempster-Diggster to work with high dump equipment.

✓ **TORQUE CONVERTER**
Excavating shovels and front end loaders have to take the abuse and punishment of intermittent jolts. The Dempster-Diggster is constructed and built, not only to accept this at its full value, but to smooth out the sudden jerking and jolting by means of a torque converter. The torque converter is a mechanical feature, but its effect on greater efficiency of the machine and lower operating costs is so great it is one of the important reasons why you want a Dempster-Diggster!

✓ **MINIMUM TURNING RADIUS**
The outside turning radius of the Dempster-Diggster is only 18′3″.

✓ **ELECTRIC BUCKET TRIP**
You get a machine with an automatic electric bucket trip for dumping drop bottom digging bucket . . . giving you instant dumping and instant closing of bucket.

✓ **TRUCK-SPEED MOBILITY**
Dempster-Diggster moves from job to job without the use of hauling equipment or can be towed behind a dump truck with the use of a tow bar.

✓ **HYDRAULICALLY STEERED**
Your Dempster-Diggster has positive hydraulic steering booster which is operated by separate, individually driven pumps. Your operator stays fresh, will not tire with this finger-tip steering.

Here's a shovel that won't skim the bank or bottom—but gets a full bucket with every stroke. Here's a shovel that gives you the extra speed on the job and to and from jobs that means extra profits to you! Pound for pound, dollar for dollar, the Dempster-Diggster will out-dig and out-load any other available competing machine in tough going! Let us prove that statement! Write for complete information, including Folder No. 3116.

You get a truck payload with a Dempster-Diggster. Note truck is loaded to maximum heaped capacity, yet Dempster-Diggster has ample clearance.

Photo above shows bucket against front of frame in the position which enables Dempster-Diggster to dig 15 inches below grade.

DEMPSTER BROTHERS, 844 Dempster Bldg., Knoxville 17, Tennessee

Elevator Attachment for Motor Graders

Cities using Allis-Chalmers 78-brake-hp AD-30, and 104-brake-hp AD-40 motor graders, or preceding models, AD-3 and AD-4, are offered an elevator attachment for side-casting or loading trucks. This new attachment is designed by the Hancock Mfg. Co., Lubbock, Texas, and has a capacity up to 1,200 yards an hour, depending on soil and ground conditions. It is available from the Allis-Chalmers Mfg. Co., Tractor Div., 1126 S. 70th St., Milwaukee, Wis.

The main frame of the attachment, including the heavy-duty box-type plow beam, is a single unit which is quickly mounted at three points on the grader. The plow beam is adjustable for different positions of the standard 30-inch disc which also has adjustments for wearing positions. Live power take-off is directly connected to the engine-drive shaft through V-belt sheaves to the heavy-duty clutch. This drives the 42-inch wide conveyor belt.

Length of the conveyor is 19 feet, with a 3-foot extension, and can be shortened to 16 feet.

For full information address the Allis-Chalmers Mfg. Co., or use the Post Card in this section. Circle No. 813.

CLT

Tax Equalization Appraisals

Fifteen years of unduplicated experience of producing highest quality appraisals for tax equalization purposes.

Client list and brochure upon request.

COLE-LAYER-TRUMBLE COMPANY

11 West Monument Ave. • Dayton 2, Ohio

PROVABLE APPRAISALS SINCE 1938

DISTRICT OFFICES:

172 Clinton Avenue, New Rochelle, New York
207 Investment Building, Pittsburgh, Pennsylvania
123 N. Poplar Street, Charlotte, North Carolina
415 Congress Street, Portland, Maine
84 Peachtree Street, N.W., Atlanta, Georgia

FISHER
M-SCOPE

for Superior Performance & Quality

T-10 Box Valve Locator
Only $115.00

54-AB Pipe-Finder
Only $149.50

Leak Survey Unit
54-C Only $275.00

Free literature upon request

FISHER RESEARCH LABORATORY, INC.
PALO ALTO CALIF.

Tractor Features Combination Digger and Loader

Designers of the Oliver Model "88" gasoline or diesel wheel tractor, recently equipped the unit with a new ½-yd. Hydro-Trencher and Swing Loader combination, transforming it into the Model 88WT Hydro-Trencher. This hydraulically-operated machine will handle all of your city's trenching jobs, including sewer and pipeline operations. To convert the Hydro-Trencher to an efficient swing loader, you simply turn the bucket around; no special tools are required.

According to The Oliver Corp., the Hydro-Trencher digs to a depth of 10 feet and loads to a height of 10½ feet. An optional boom cylinder, however, will increase the digging depth to 12 feet, while an optional loading bucket, complete with a hydraulically-controlled trap door, permits loading to 12 feet.

A preset boom relief valve gives the machine constant digging power.

An interesting feature of the Model 88WT is the new dual-circuit control system that gives the operator a choice of three lift or drop speeds on the boom, and provides him with the deli-

Would You Trade

50¢ for $1.00 ?

LAKE SHORE

Lifetime ALUMINUM Street Name Signs

Double Your Money!

. . . YEAR AFTER YEAR!

✓ REDUCED MAINTENANCE
✓ LOOK BETTER ✓ LAST LONGER

WRITE FOR FREE CATALOG - SAMPLE OFFER

Lake Shore Markers 654 W. 19th St. Erie, Pa.

CABLE ADDRESS - "LASHMAR", ERIE, PA.

To Solve Parking Problems

Use

FROM THE STATE CAPITALS

reports to keep in touch with what other cities and states are doing to facilitate the financing and construction of additional off-street parking space. Coverage of other topics also available, according to your specialized needs. For details, write . . .

Bethune Jones
234 River Rd.
Red Bank, N. J.

cate control necessary for working close to pipe and foundations. In addition, this same system enables him to perform two operations at once, without loss of pressure.

A new folder describing the Hydro-Trencher is obtainable from The Oliver Corp., Merchandising Dept., 400 W. Madison St., Chicago 6, Ill. Write directly, or you may use the Post Card on the colored page in this section. Circle No. 782.

Top Efficiency in New Typewriter

As the entire function of a typist and her typewriter is that of typing, the keyboard is the producing element of her machine. All the contributing features of the typewriter should be moved as closely within finger reach of the keyboard as possible. This is the design theory on which the new personal-touch Underwood 150 was created.

The self-locking margin stops, located just above the keyboard, may be set

simultaneously without moving the carriage. All operating features are keyboard controlled with a minimum of finger reach required. The top front of the main frame has been lowered ¾-in. for added visibility of the typing surface, and the entire keyboard has been brought closer to the operator.

While incorporating these and other advanced features, the time-tested features perfected in almost 60 years of typewriter manufacturing have been retained. These include the effortless Underwood shift, visible margins, full-length tabulator bar, and snap-off side and rear frame plates for ready access to all parts for adjustment and servicing.

For complete description and price, write Underwood Corp., One Park Ave., New York 16, N. Y., or you may use the Post Card on the colored page in this section. Circle No. 779.

MODEL 1.5M25, *1500 watts, 115 volt AC on two-wheel cart. Manual control. Also 115 volt DC weighing 101 lbs.*

KOHLER
ELECTRIC PLANTS
Portable Power Anywhere, Any Time

Take electricity to the job

Jobs move faster with electricity at the spot where the work is done. Low-cost portable model operates grass shears, pruners, chain saws, hedge trimmers, carpenters' saws, drills and other tools. Weighs 130 lbs. Handles for carrying.

Other models, 500 watts to 30 KW, for trucks, street repairs, police and fire departments, electro magnets. Also stand-by models to protect hospitals, sewage treatment and filtration plants, communication systems, schools, public buildings, when central station power is cut off. Write for folder 20-S.

Kohler Co., Kohler, Wisconsin. Established 1873

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES, • PRECISION CONTROLS

FOR RENT
Sewer Cleaning Equipment

Thomas Drain Service
Home Office - 35 S. College St., Akron 8, Ohio
Collect Phone Calls Accepted
Call BLackstone 2212 Akron, Ohio

- Most municipalities are not equipped to cope with the problems presented by their sewers, the cost of sufficient equipment to maintain the sewers is prohibitive.
- We will rent this equipment to you, and supply a man to supervise its operation.
- May we tell you more about this economical method of sewer maintenance?

No. 3X

Frame length 37¼"
Frame width 15"
Capacity ¾" to 2" Pipe

A ONE MAN MACHINE

Push Pipe
Summer & Winter
Push Pipe

WRITE FOR NEW CATALOG SHOWING COMPLETE LINE OF PIPE PUSHERS AND PRICES.

GIANT MANUFACTURING CO., COUNCIL BLUFFS, IOWA

PROTECTION ✓
EFFICIENCY ✓

for your

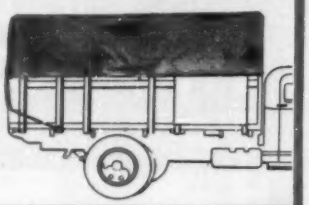
CITY

Shuredry

SALVAGE COVERS
for your
Fire Department

Cut water and smoke damage with SHUREDRY Green-Bak Salvage Covers — they're pressure impregnated by an exclusive Fulton dry-treatment process. All seams are waterproof. SHUREDRY Covers are light, pliable and easy to handle. Specify SHUREDRY — your Fire Equipment Dealer has them.

FULTON COVERS
for your
Sanitation Trucks



Fulton makes a complete line of top quality Tarpaulins and Truck covers in any size you need.

Fulco

CONCRETE
CURING MATS *for*
your Road Department

Fulco Mats produce a more uniform paving job, minimize the possibility of cracks and do in 72 hours what took about 10 days under the wet-burlap-wet-earth method. Fulco Mats can be used 50 to 75 times. They're economical.

FULTON COVERS AND TARPS
for your Softball
Baseball
and Football Fields

Fulton's special treatment of the heavy canvas duck, assures long, economical service.

Write your nearest Fulton branch for information and prices.

Fulton

BAG & COTTON MILLS

ATLANTA • SAVANNAH • NEW ORLEANS • DALLAS • ST. LOUIS
DENVER • LOS ANGELES • KANSAS CITY, KANS. • MINNEAPOLIS
NEW YORK CITY • WINTER HAVEN, FLA. • SAN FRANCISCO
PHOENIX

This →

can turn a *catastrophe*
into a mere inconvenience!

When you prepare for trouble with a "U.S." Stand-by Electric Plant, you guarantee that a power failure will not cause loss of life and property! Write for information, stating type of power you need. The "U.S." complete line includes both AC and DC units from 300 watts to 200 KW.

UNITED STATES MOTORS CORPORATION
U.S
OSHKOSH, WISCONSIN

United States Motors Corp.
420 Nebraska St. Oshkosh, Wis.

Nite-Bright

HIGHWAY SIGNS

"BRIGHT BY DAY — BRILLIANT BY NIGHT"

FOR THE BEST IN TRAFFIC SIGNS (heavy type)
ALUMINUM SIGNS REFLECTORIZED WITH
SCOTCHLITE • EMBOSSED STEEL BAKED
ENAMEL SIGNS
CHANNEL IRON SIGN POSTS IN STOCK
TRAFFIC CONES—IMMEDIATE SHIPMENT

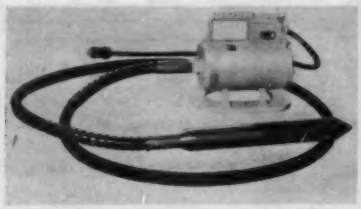
See Our Listing in the 1953 Edition of The Municipal Index

Write Us for Complete Information

NITE-BRIGHT SIGN COMPANY
140 JAMES STREET, BRIDGEPORT 4, CONN.

Purchasing News

Powerful, New Vibrator Works Dense Concrete



Model ME-13 White vibrator.

Model ME-13, a new motor-driven vibrator that works quickly even in dense concrete, is announced by the White Mfg. Co., 1227 N. Beardsly Ave., Elkhart 1, Ind. It is powered by a small universal motor, rated at 2-hp. but developing almost 2¾-hp., which operates at high speed on 110-volt alternating current of any cycle, and on direct current. No special high-cycle generator is required.

Equipped with a heavy off-center rotor operating without excessive speed, the new unit attains increased impact for faster vibration and placement of concrete. Normal speed is 7,500 to 8,000 rpm, which avoids cavitation in the concrete. This cavitation, explains the manufacturer, is caused by unduly high speed when the cement cannot flow rapidly enough to follow the vibrator.

The Model ME-13 is mounted on either rigid flat or on swivel base, keeping the motor above ground and away from dirt and sand. The head is driven by fully interchangeable drive sections of 7- and 12-ft. lengths. For 220- and 440-volt current, Model ME-17 is furnished, with a belt-driven countershaft for high speeds.

White's new concrete vibrator is fully described in literature from the company. Write directly, or you may use the Post Card on the colored page in this section. Circle No. 802.

Quality

CONNOT BE ARGUED INTO A SEWER CLEANING MACHINE

"TURBINE"

BUILDS IT IN

There is no compromise with quality when you purchase Turbine's rugged Power Units.

Write today for Free Catalog with complete specifications and prices.

TURBINE SEWER MACHINE CO.

DIVISION OF CHAS. H. STEHLING CO.

1303 N. 4th STREET MILWAUKEE 12, WISCONSIN

there should be

EDDY HYDRANTS

in your future installation plans because:

- They are mechanically *right* and simple in design—built to highest standards of craftsmanship—for decades of dependable operation with minimum maintenance.
- Easily serviced by one man, without special tools or heavy rigs.
- Large waterways—open smoothly *with* the pressure and close without water hammer.
- Drip action positively drains standpipe, safeguarding against freeze-ups.
- Available with all types of connections.
- 104 years' successful operation assures availability of repair parts.
- Meet all A.W.W.A. specifications.

Send today for full information on the complete line of Eddy Valves and Hydrants. No obligation.

EDDY VALVE COMPANY

A Subsidiary of James B. Clow & Sons

WATERFORD, NEW YORK

13 out of 14 Flushers in Detroit fleet are Etnyres!

Albert Gladych operates Etnyre Street Flusher on McClellan St., Detroit

...keep Detroit streets clean, cool, sanitary!

Flush, sweep, then flush again is the method used in the City of Detroit to keep its streets clean, cool, and sanitary. The city is divided into seven sanitation districts, with two flushers operating in each district.

In 1946, five Etnyres were purchased to replace outmoded flushers. Again, in 1952, eight more Etnyres were added to the fleet.

Reports from Mr. John Bierlein, Assistant Superintendent, Department of Sanitation, and Mr. Louis Bintz, Mechanical Maintenance Foreman, indicate that the Etnyres are in service thirty-two weeks out of the year for street cleaning purposes. Occasionally they are called upon to fight fires at city dumps. Cleaning results and operation features of the Etnyres are declared to be satisfactory.

Whether you need one flusher or a fleet of twenty, get specifications and prices on latest Etnyre models. Etnyres are now in use throughout the world for flushing streets, fighting fires, sprinkling, cleaning sewers, pumping out basements, spraying trees, and watering shrubbery. Check on "The Machine of a Dozen Uses" at your earliest opportunity—phone your nearby dealer or write us.

SEE YOUR ETNYRE DEALER!

ETNYRE
Street Flushers
"THE MACHINE OF A DOZEN USES"

E. D. ETNYRE & CO., Oregon, Ill.

Purchasing

Helps to Improve Your Water Supply

The Graver Water Conditioning Co., manufacturers of a "Package" water-treatment plant for smaller municipalities is expanding its Municipal Department, according to H. T. Sulcer, vice-president of the firm. The Department is being enlarged to handle a greater demand for the company's products and services.

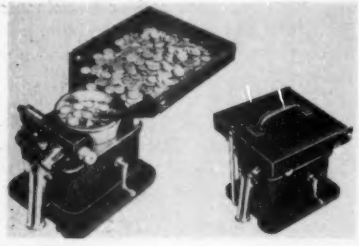
In addition to the "Package" water-treatment plant, Graver produces the high-rate Reactivator, a cold-water conditioning unit for removing turbidity, hardness, color, taste, odor, iron and manganese from water. Also aerators, filters, iron removal systems, zeolite softeners, swimming pool filtration systems, and conventional sedimentation and floculation equipment.

Main offices of the Graver Water Conditioning Co. are located at 216 W. 14th St., New York. Information on how to improve your water supply may be obtained directly from the manufacturer, or use the Post Card in this section. Circle No. 815.

Pennies to Quarters Quickly Counted

Developed by Klopp Engineering, Inc., to handle toll, meter and other coin collections, this 14½-pound portable coin counter is easy to fold and carry. It counts pennies, nickels, dimes and quarters quickly, then packages them for bank deposit.

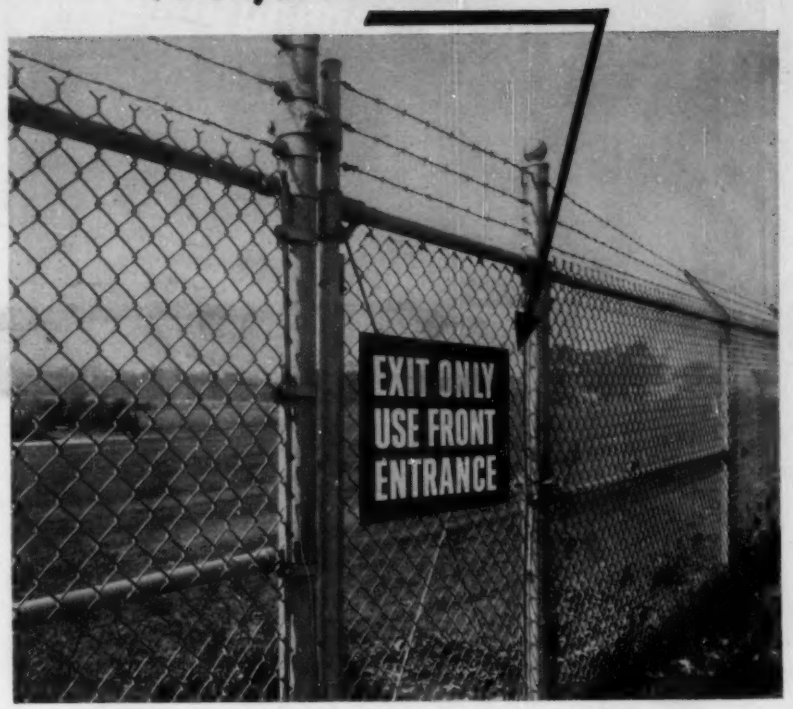
In addition to complete accuracy, the new coin counter offers simple op-



eration. All you do is set a single adjusting knob. If you want the coins packaged, turn a second knob to the number of coins per pack, and the coin flow and count will be cut off automatically when the stipulated number of coins have been packaged.

Interested city officials are offered complete information by Klopp Engineering, Inc., 35551 Schoolcraft, Livonia, Mich. Write, or use the Post Card in this section. Circle No. 806.

To enforce this...



you need **CYCLONE FENCE!**

● The smooth, even regulation of traffic patterns is one of the hardest jobs that faces planning engineers on all sorts of municipal recreation projects. That's why so many city authorities have selected Cyclone Fence to put the "voice of authority" in signs like this.

The suitable applications for Cyclone Fence on municipal projects are practically unlimited. And wherever it is used, it is distinguished by outstanding service. Cyclone Fence is sturdily built to give years of property protection. It features rugged chain link fabric—galvanized *after weaving* to assure the maximum resistance to rust and corrosion with the minimum of maintenance. The fabric is stretched and attached to posts amply strong to withstand sudden shocks and strains.

Your particular fencing job may be something very different from a recreation area. If you must control trespassers or exclude thieves and marauders from vital municipal projects, there is a type of Cyclone Fence that will meet your needs perfectly. Get in touch with our engineers. They will be glad to give you free advice.

In the meantime, write Cyclone Fence, Department B-44, Waukegan, Illinois, for free literature on the types of Cyclone Fence.

NO JOB IS TOO LARGE—NO JOB IS TOO SMALL FOR CYCLONE*

CYCLONE FENCE DEPARTMENT, AMERICAN STEEL & WIRE DIVISION
UNITED STATES STEEL CORPORATION
WAUKEGAN, ILLINOIS · SALES OFFICES COAST TO COAST
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

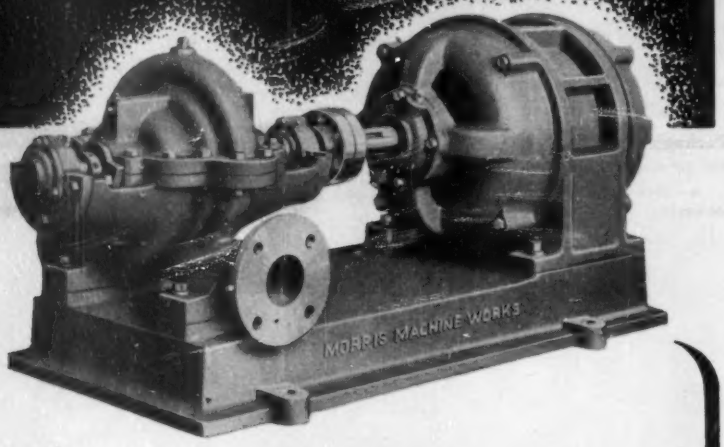
USS

**Cyclone is the trade-mark name of fence made only by Cyclone. Accept no substitute.*

USS CYCLONE FENCE

UNITED STATES STEEL

FLOATING Sealing Rings
Permit Closer Running Clearances . . .



MORRIS HORIZONTAL SPLIT *Double-Suction* WATER PUMP

No other pump has the Floating Sealing Rings . . . yet this exclusive feature alone makes the Morris Double-Suction Water Pump outstanding for efficiency and long service.

During the instant that the pump comes up to speed, but before full pressure is built up, the Morris Floating Sealing Rings adjust themselves to a uniformly close running clearance around the impeller. As soon as full speed is developed, the internal hydraulic pressure acting upon the vertical face of the Floating Ring, presses it tightly against the precision machined surface of the casing ring where it is firmly held in place.

This action permits machining the rings to closer clearances. Leakage is consequently reduced to a minimum, initial efficiency maintained for much longer periods of service. Assures concentricity of ring with impeller and eliminates binding due to abnormal operating conditions.

Advanced design of Morris Double-Suction Water Pumps and their several exclusive features assure increased hydraulic and mechanical efficiency . . . reliability . . . and low maintenance cost. Write today for free Bulletin 179.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Sales Offices in Principal Cities

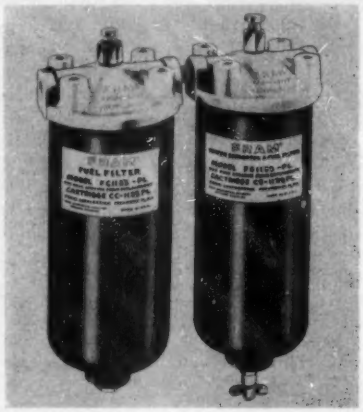
MORRIS *Centrifugal Pumps*

Purchasing

Separates Water from Diesel Fuel

This new fuel filter, designed to lengthen the life of diesel engines and cut injector maintenance costs, removes all water from the fuel and filters out dirt, rust and other solid contaminants down to one micron. Made by the Fram Corp., Providence 16, R. I., it is available for easy installation on diesel engines up to 225-hp.

The new combination unit consists of a fuel filter and water separator, both using replaceable cartridges. The fuel filter unit filters the solid contaminants while condensing water in the fuel into large droplets. The clean fuel is then ready to pass through a connecting nipple in the water separator unit. Water collects on the outside surface of the separator cartridge and drops into the sump.



Once the fuel has reached the outlet of the second unit, it has been micronically filtered from solid contaminants, fresh and salt water. Water is easy to remove from the filter sump with a drain valve.

Full data on the new Fram Water Separator & Fuel Filter may be obtained by writing directly to the manufacturer, or you may use the Post Card in this section. Circle No. 781.

Vacuum Cleaning System Means Cleaner Plant

Hand sweeping is not only an expensive way to keep sewage treatment plants and incinerators clean, it is a wasteful way to use manpower and often dangerous. The way to overcome these difficulties, a number of cities are discovering, is to use a U. S. Hoffman, stationary, permanently in-

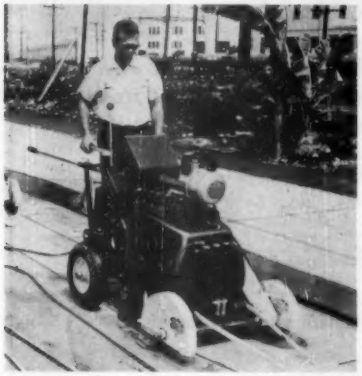
stalled vacuum-cleaning system.

The Hoffman stationary systems are simply designed and sturdily built for continuous operation and minimum maintenance. The system consists of a centrifugal exhauster for moving air, dust separators for collecting the material, and a piping system for conveying the material from inlet valves conveniently located throughout the areas to be cleaned. A wide variety of vacuum tools permit the operators to work rapidly and efficiently. Special rubber and fiber tools can be supplied for use around electrical equipment.

The vacuum-cleaning system never generates new dust. Once the dust enters the nozzle of a vacuum-cleaning tool, it is removed from the plant. The cycle of rise-and-fall is ended. Dust is handled only once when it is picked up by the nozzle.

The company has published a new bulletin, A-939, describing the complete line of vacuum-cleaning equipment. For your copy, write to the Air Appliance Division of U. S. Hoffman Machinery Corp., 105 Fourth Ave., New York 3, N. Y., or you may use the Post Card on the colored page in this section. Circle No. 785.

Faster Street Repair at Less Cost



Many communities that once handled the breaking of concrete for street repairs with trip-hammers and sledges, have turned to this new power-driven concrete cutter, the Di-Met 252, to do the job. Not only does the new unit lower costs, it makes straight, even cuts as well, requiring less time and a reduction in manual labor.

Designed by the Felker Mfg. Co., Torrance, Calif., the cutter is featured here on a job specifying a 1¾-inch cut through cured concrete close to a curb. After the score was made to this depth in the concrete, breaking tools were used to knock out the rest of the slab, without damaging the curb or surrounding concrete.

The Di-Met 252 is powered by a 26-hp engine made by the Kohler Co., Kohler, Wis., which moved the blade through a hard grade of concrete at three feet per minute. The sole task of the operator was to guide the machine.

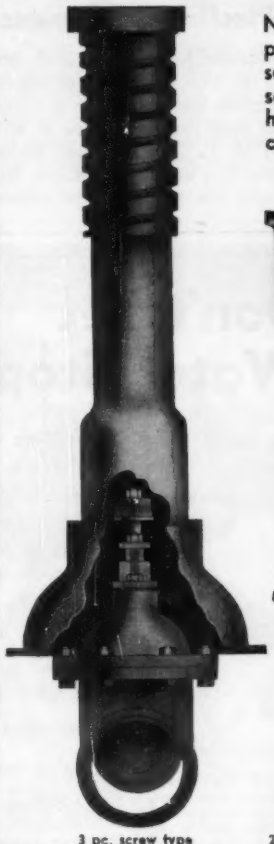
A Di-Met diamond abrasive blade is used by the cutter. One of these blades, 18 inches in diameter, is capable of making a cut 6½ inches deep. The Kohler-powered unit can move 6- to 9 feet per minute at a depth of 2-inches in asphalt and uncured concrete.

The Di-Met 252 is fully described in literature from the Felker Mfg. Co. Write directly, or use the Post Card on the colored page in this section. Circle No. 796.

"BUFFALO" Municipal Castings come in every size and style!

No matter what your needs may be, you're pretty sure to find a "Buffalo" casting to serve the purpose, whether it be in valve, service or roadway boxes, meter boxes, manhole rings & covers, or other municipal castings.

If you need special castings, either gray iron or non-ferrous, let us give you a quotation.



3 pc. screw type 5¼" valve box.

2 pc. sliding type adj. 5¼" valve box

2½" water or gas ext. service box

Extra Heavy Traffic 2½" or 3" service box

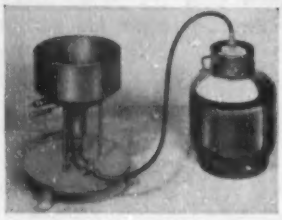
All the new designs of "Buffalo" boxes are interchangeable with older "Buffalo" boxes—another big advantage of always insisting on "Buffalo" municipal boxes and castings.

Write or wire Dept. J for Bulletin M11

BUFFALO PIPE & FOUNDRY CORP.
BOX 55—STATION B DE. 6764 BUFFALO, N. Y.

Insto-Gas

JUMBO FURNACE



FOR UTILITY CONSTRUCTION WORK

Now Insto-Gas offers JUMBO, an instant lighting furnace that will melt large quantities of lead, babbitt, zinc and compounds quickly. Only 15 minutes heating time required for 200 pounds of lead.

The broad base of the JUMBO furnace permits use on uneven or soft ground, and a convenient bail handle makes it easy to move on the job. Cast iron melting pots with pouring lips, tilting lugs and tilting hooks are available in 100 and 200 pound capacity.

When a 50 ft. connecting hose is used the JUMBO furnace can give service over a wide area without moving the cylinder. The flame control valve is located on the furnace.

INSTO-GAS TORCHES

Utility Maintenance departments use Insto-Gas torches for soldering, sweating copper pipe fittings, preheating and thawing.

INSTO-GAS EQUIPMENT IS LISTED BY BOTH UNDERWRITERS LABORATORIES AND FACTORY MUTUALS LABORATORIES

If your distributor cannot supply Insto-Gas send for complete information. USE THE COUPON.

MAIL TODAY

Please send information on Insto-Gas to:

Name .....

Address .....

AC .....

Insto-Gas Corporation - Detroit 7, Mich.

Solvent cement and slip-sleeve couplings join two lengths of Tenite butyrate pipe.

Plastic Pipe Conducts Corrosive Well Water

Air-saturated water with a high percentage of CO_2 will be conducted through more than a quarter of a mile of Tenite butyrate plastic pipe in Wilmington, N. C. The Carolina Power and Light Co., recently installed this plastic-pipe line to deliver the corrosive water from its source to large tanks where the air and gas will be dispersed. The decarbonized water will then be used at the new Wilmington Steam Electric Generating Plant.

Extruded of lightweight Tenite butyrate plastic, the corrosion-resistant pipe

Don't Let Water Stop You!

The Manu-Mine organization can help you solve your difficult ground water problems through its contracting and consulting service. Specialists in:

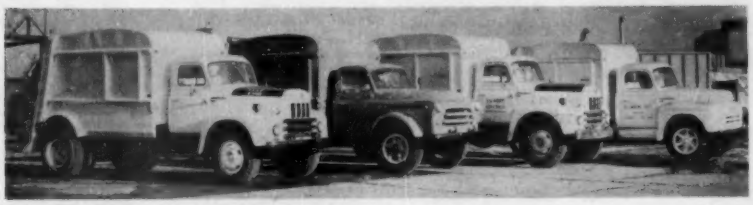
1. Stopping the flow of water through walls, foundations, geological strata, etc., by chemical soil solidification
2. Stabilization of soils around foundations and footings
3. Water reservoir rehabilitation and construction
4. Ground water studies
5. Geological and mining studies
6. Air-placement of concrete
7. Highway engineering

Let us know your problem and we'll be glad to discuss it with you. Call or write:

Manu-Mine Research & Development Co.

P. O. Box 167, Reading, Pa. **Telephone: 4-2778**

Armed Forces Provide for Low-Cost Refuse Collection



A problem confronting all four branches of the armed services concerns the sanitary, low-cost collection of refuse at camps and bases throughout the United States. These four Gar Wood Load-Packers represent a part of recent orders totalling 286 units for the Air Force, Army, Navy and Marine Corps. To date, Gar-Wood Industries, Inc., 36253 Michigan Ave., Wayne, Mich., has furnished the armed forces with some 900 Load-Packers.

cost the company less, was easier to handle, and was installed in less than half the time needed for metal pipe installations. The 20-ft. lengths, 3 inches in diameter, were joined together quickly by slip-sleeve couplings and solvent cement, providing, in effect, welded joints. Threading of couplings and pipe was eliminated.

Buried some 30 inches below the surface of the ground, the plastic-pipe line will be operated at about 50 psi. Before covering the pipe with earth, the line was successfully tested up to 70 psi.

Tenite butyrate plastic is made by Eastman Chemical Products, Inc., AC 3-54, Kingsport, Tenn. For full information on this low-cost, effective pipe material, address the company directly, or use the Post Card on the colored page in this section. Circle No. 787.

DAY IN and DAY OUT Your Unconditionally Guaranteed

Davis Loader

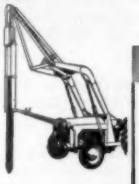
WILL DO MORE JOBS BETTER THAN ANY OTHER LOADER

There's no time out for this work horse. Convenient attachments give it year 'round useability. Exclusive features such as 12-minute attachment, box frame construction oil filter, adjustable arms that keep bucket in correct position with ground, and others make it your best buy.

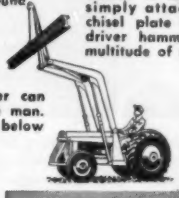
SHOVELS AND LOADS
Leaves, snow, dirt, and trash are easily cleared and loaded with either material or utility bucket.

DOZES
Dozer has 62" blade. Skid shoe extends full length. Permits hydraulic control of bite.

DRIVES POSTS
Powerful post driver can be operated by one man. Drives 10' high to 5' below ground.



BUSTS CONCRETE, ETC.
The handy concrete buster is made by simply attaching a chisel plate to post driver hammer. Has multitude of uses.



LIFTS BULKY MATERIAL
Heavy-duty crane is invaluable for lifting all types of bulky material.

SEND THIS COUPON FOR COMPLETE FACTS

Dept. A

Please send me literature on the Davis Loader to fit a _____ model tractor.

NAME _____

ADDRESS _____

CITY _____ STATE _____

MID-WESTERN INDUSTRIES, INC. 1009 S. WEST ST., WICHITA, KAN.

Built to dry a MILLION hands

with "low cost" electricity

. . . and "no-cost" air

the new AERODYNAMICALLY ENGINEERED Electric-Aire HAND DRYERS

Write for the Amazing Facts, and new Low Cost — or a demonstration on your premises if you desire.

Write today, direct to Dept. E

ELECTRIC-AIRE ENGINEERING CORP.
209 W. Jackson Blvd. • Chicago 6, Ill.

ELECTRIC-AIRE CO. OF CANADA
669 Talbot Street • St. Thomas, Ont.

"CENTURY." PIPE

is made from asbestos fiber and portland cement—two almost indestructible materials. Being non-metallic it *cannot* tuberculate. Through generations of service its bore stays clean and smooth. Friction remains at a minimum, pumping costs stay low.

Consider the many other distinct advantages of "Century" pipe and you'll see why more and more thrifty towns are choosing it—why it's the wise choice for your community, too!

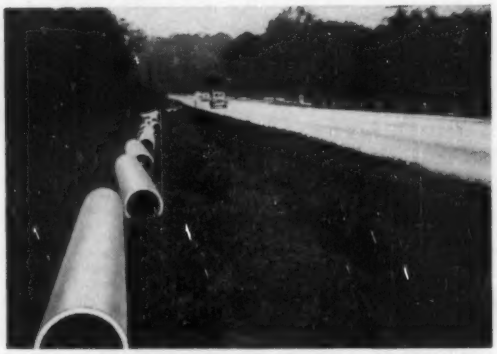
Write for further information now.

non-tuberculating

QUALITIES THAT MAKE "CENTURY" PIPE ECONOMICAL, TROUBLE-FREE, LONG-LIVED

1. NON-TUBERCULATING
2. NON-CORROSIVE
3. EXCEPTIONALLY STRONG
4. DURABLE
5. IMMUNE TO ELECTROLYSIS
6. TIGHT JOINTS
7. SMOOTH BORE
8. EASILY, QUICKLY LAID
9. LIGHT WEIGHT
10. LOW COST

"Century" pipe meets the A.W.W.A., A.S.T.M. and Federal Specifications for asbestos-cement pressure pipe.



"Century" pipe awaiting installation along U.S. Route 1 — part of an 8000 ft. water supply line, 12" Class 150 pipe, from the Borough of Media Water Works to Middletown Township, Pa.

See us at the A.W.W.A. Annual Convention, May 23-28, 1954 • Booths 5 and 6 • Civic Auditorium, Seattle, Wash.

KEASBEY & MATTISON COMPANY • AMBLER • PENNSYLVANIA

K&M best in asbestos ®

Nature made asbestos . . . Keasbey & Mattison has made it serve mankind since 1873

New Chain Saw Cuts Faster

This model 17 Homelite chain saw has an 18-in. guide bar and chain.

It takes one man only 18 seconds to saw through an 18-inch tree when using the new Homelite model 17. This 22-pound, 3.5 brake hp. chain saw is easier to handle than previous models; fells trees four feet or more in diameter quickly.

Featured in the new model 17 chain saw are an automatic clutch, all-angle diaphragm carburetion, positive chain lubrication, and weather-proof ignition. Straight blades are made in 15- to 30-inch sizes, while plunge-cut bow saw attachments, for one or two man operation, are available in 14- and 18-inch sizes.

Homelite Corp., 103 Riverdale Ave., Port Chester, N. Y., will furnish complete information on the model 17 chain saw. Write directly, or you may use the Post Card located for your convenience on the colored page in this section. Circle No. 807.

Retractable Wheel Tandem Roller

Fingertip hydraulic control is used to raise the complete Galion roller unit off the ground for easy towing.

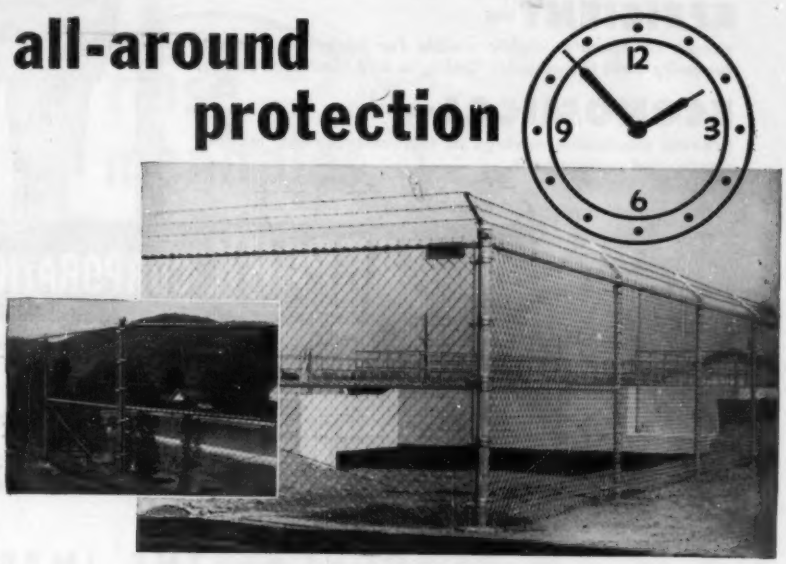
Tow this four to six ton portable tandem roller behind any truck and you can take it from one street maintenance job to another quickly, easily and safely, reports The Galion Iron Works & Mfg. Co., Galion, Ohio. The complete roller is raised from the ground and rides along on retractable, roller bearing, rubber-tired transport wheels. These wheels are hydraulically-operated by a control on the operator's platform.

Powered by a 25-hp gasoline engine, the new roller fulfills specification requirements for compressions ranging from 144- to 206 pounds per inch of roll width. Both steering and compression rolls may be filled with water ballast.

Other features incorporated in the Galion roller include hydraulic steering, a spur gear final drive, constant mesh transmission and a large diameter compression roll.

For full information on this easy-to-operate, low-cost unit, address the company direct, or take advantage of the Post Card on the colored page in this section. Circle No. 791.

all-around protection



with REALOCK FENCE

With a Realock Fence you have protection that's all around your grounds . . . all around the clock —an ever-present, ever-vigilant guard against arson, burglary, vandalism and other costly hazards.

Noted for its rugged construction, Realock Fence costs little or nothing for maintenance; can be depended on for long-lasting resistance to the weather.

Consult your classified telephone directory for the nearest Sales Office, or write to any of our three Division offices for free estimate or catalogue.

THE COLORADO FUEL AND IRON CORPORATION
Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION
Buffalo

REALOCK FENCE
THE COLORADO FUEL AND IRON CORPORATION
CF&I
BRANCHES IN ALL KEY CITIES

1943

Rx PRESCRIPTION FOR BETTER TRAFFIC CONTROL

Traffic Control, parking, and parking enforcement can become an efficient and economical operation in your city —when you install the dependable KARPARK TWIN-O-MATIC or UNIMATIC parking meters. They're superbly built by the famous HERSCHEDE HALL CLOCK COMPANY, makers of America's finest clocks.

FLEXIBLE—
tailor-made to suit your own requirements for coin combinations and time intervals.

EFFICIENT—
simple to operate, highly visible for easy enforcement, ruggedly built for accurate timing in any kind of weather.

ECONOMICAL—
provide substantial savings in law enforcement, maintenance, and replacement.

KARPARK TWIN-O-MATIC
Times two cars with one installation. Adjusts to any desired change in regulations. Reduces maintenance and collection costs to unheard-of lows. Ruggedly built for long life.

KARPARK UNIMATIC
For single car parking. Can be used for an entire system of single car parking, or, when used with Twin-O-Matic, can be placed at street ends and special single locations.

Available with
Automatic Dump System, Sealable Boxes, or Open Top Boxes.

For complete data, write to

THE KARPARK CORPORATION
CINCINNATI 6, OHIO

In Canada TWIN METER CO. OF CANADA, LTD. 5002 Park Avenue, Montreal 8, Quebec

BOX 3537 **THE SIDU CO.** LONG BEACH, CALIF.

Sewer Cleaning Equipment *Manhole Cushion*

ANNOUNCES THE IMPROVED
WAYNE SEWER CLEANING BALL

- Brass reinforced Shackle Lug protects against loss of ball in sewer line.
- Neoprene instead of natural rubber—resists grease, oil or acids.
- Deeper air valve to control flow, preventing sewage flow from flooding Buildings and Cellars.

Is Your City Up-to-Date in Its Operation Methods?

THE AMERICAN CITY
470 Fourth Ave., New York 16, N. Y.

Please send me ..... copy (copies) of your Municipal Official's Handbook (Price per copy is $3.00)
A check covering this order is enclosed ..... Please bill me ..... (Check one)

Name .....
City or Company .....
Address .....
City..... Zone..... State.....

A good way to find out is to read about the practical experience of other city officials who have problems like yours. This experience is described in the "Municipal Official's Handbook" by William S. Foster, Engineering Editor of *The American City*. The latest methods on street construction and maintenance, snow removal, street cleaning, and refuse collection and disposal are explained in detail. Write us today for your copy.

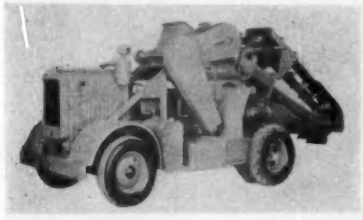
Better Way to Mark Traffic Lines

Mark up to 8,000 feet of 4-in. traffic line per hour with this new, large-capacity, pressure-type unit. The M-B Model 1-10 is equipped with a 10-gallon paint tank and marks single lines 2½- to 5 inches wide. Hand-propelled, it is powered by a 1-hp air-cooled engine operating on one gallon of gasoline per day.

Municipalities can use this new marker for traffic lines, parking lots, safety zones and street crossings, and as a portable paint spray unit to paint traffic signs, curbs and park benches. The spray assembly, located at the right front of the unit, features an M-B Jet Cup, which insures a neatly defined mark with an even thickness of paint throughout its width.

For additional information about the Model 1-10, write directly to the Meili-Blumberg Corp., New Holstein, Wis., or use of the Post Card on the colored page in this section. Circle No. 783.

Improved Trenchmobile Digs Wider Ditches



New Model 88 is small enough to work efficiently in restricted spaces.

Good engineering requires that the trench for water and sewage pipe, tile and conduit systems be no larger than necessary. A sure way to get the proper width of a trench is to use the Model 88 Trenchmobile, now available with a choice of three bucket widths; 8-, 12- and 16 inches.

Important features of the new pneumatic-tire mounted unit include its hydraulic-boom hoist with positive down crowd, plus 3-point suspension wheels from the Trenchmobile frame. The Model 88 maintains grades quickly and accurately; excavates in roadside ditches despite uneven terrain.

Designed by the Parsons Co., the Trenchmobile has a reversible shiftable belt conveyor for depositing spoil to either side, a crumber to assure a cleaner trench bottom, and a dual purpose excavator drive and safety clutch. Variable bucket line speeds permit dependable operation in different soil conditions, while variable digging traction feeds keep the unit operating at peak forward speed.

For detailed literature, write the Parsons Co., Sales Office, Newton, Iowa, or take advantage of the Post Card located on the colored page in this section. Circle No. 776 .

raise manholes this cost-saving way

fast, economical, safe

On your next resurfacing project you can do a permanent, secure job of raising manholes in a fraction of the time required by old methods if you use W-B Manhole Adapters.*

COMPARE THESE ADVANTAGES

1. ECONOMY—The "Manhole Adapter" is much less expensive to install than adjusting the manhole ring.
2. SAFETY—The "Manhole Adapter" is installed just prior to application of finish coat. No lights, no barricades needed.
3. Structural strength of street is not impaired.
4. Traffic not materially interfered with. Within reasonable limits, it continues while resurfacing is in progress.
5. The finished job presents a smooth, level appearance. In rolling for compaction, the "Manhole Adapter" and cover conform to street contour.

* Registered U. S. Patent Office.

WRITE FOR FULL DETAILS

Send for our new brochure today. Or better yet, mail blueprint of your standard manhole ring and cover and we will quote prices promptly without obligation.

SEND FOR NEW BROCHURE

A. Reed Wilson Co.,
1320 McGee St., Kansas City 6, Mo.

☐ Send me Brochure describing the W-B Manhole Adapter.
☐ Enclosed is blueprint of our standard manhole ring and cover so you can quote price.

Name .....
Address .....
City ..... State .....

When power fails and lights go out, panic is just around the corner. Accidents occur. Lives are in danger. Lawsuits are not far behind. These are reasons why builders of hospitals, hotels, schools, theaters and public buildings want stand-by emergency power.

The dependability of Fairbanks-Morse stand-by generating sets has been proved again and again. They are available in capacities—from 3 to 40 KW, AC or DC. For complete details write Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.

FAIRBANKS-MORSE
a name worth remembering when you want the best

WATER SYSTEMS • GENERATING SETS • MOWERS • HAMMER MILLS • MAGNETOS
PUMPS • MOTORS • SCALES • DIESEL LOCOMOTIVES AND ENGINES

NO STOOP, NO SQUAT, NO SWEAT
WHEN YOU USE THE
Hoffco PAT PEND.
CLEARING QUARTETTE

2 H.P. POWER UNIT AND FOUR *SPECIALIZED* CUTTING HEADS!

Most efficient team sold, HOFFCO's 2 HP Power Unit—4 worksaving attachments. Size up the job, attach the right cutting head, move 6 times faster, stand upright every second. 1000's now in use. See it demonstrated today!

WRITE FOR COMPLETE INFORMATION

SAWETTE HEAD $64.50
Chain saw fells growth up to 8" in diameter. You stand upright!

TRIMETTE HEAD $59.75
Circular blade trims close—spreads mulch evenly—no raking!

SCYTHETTE HEAD $39.75
Clears weeds, brush, any tangle—even works under water!

BRUSHETTE HEAD . . $59.75
Guarded 10" blade clears stubble, brambles—rips 3" dia. trees; protects operator!

HOFFCO, inc. ALL PRICES F.O.B. FACTORY RICHMOND, INDIANA

Purchasing News

Big jobs require not only big, massive equipment able to handle a huge volume, but also fast-moving precision equipment able to complete a multitude of small jobs to close tolerances. Such is the case at the billion dollar atomic energy plant currently being built near Portsmouth, Ohio. The work requires the moving of 3,300,000 cubic yards of earth, plus the construction of 5,300 footings for the needed buildings. The holes to receive these footings must be dug to exact specifications with a tolerance of less than a half-inch. They vary from 4- to 11 feet square and from 2- to 12 feet deep.

Five Warner and Swasey "Gradalls" have been assigned to do this precision job. The machines have been able to excavate 50 to 60 of these foundations daily. Construction costs have been encouraging. One estimate places the cost with a Gradall at only $50 for the excavation of a hole 11 feet square by 8-feet deep. Using hand labor this cost would have been more than $150.

Full information on the Gradall is obtainable from The Warner & Swasey Co., 5701 Carnegie Ave., Cleveland 3, Ohio. Write directly, or use the Post Card in this section. Circle No. 777.

Fast, Precise Excavation

Precision control is required and supplied when the Warner and Swasey Gradall goes to work on this foundation excavation for an atomic energy plant.

Purchasing

250 New Transit Cars For Chicago

Delivery has started on 250 elevated-subway cars for Chicago Transit Authority. The existing new rapid transit cars number 200, and when the current C.T.A. order is filled there will be 450 cars electrically equipped by the Westinghouse Electric Corp., Boston 36, Mass.

On a double-track rapid-transit line these cars would be able to handle 50,000 passengers per hour in each direction, while at the usual loading of private automobiles a four-lane highway without street intersections could carry a maximum of 5,200 persons per hour in each direction. One rapid-transit lane is capable of moving as many people as can be moved in private automobiles on 20 lanes.

Riding Mower Expedites Park Maintenance

City officials are offered a simple-to-operate riding mower that will work quickly in parks, on school and hospital grounds, and on any size public lawn. Designed by Meade Products Mfg. Co., the new model B is equipped to make a complete turn in a 60-in. circle for easier cutting. It can be operated forward or reverse, and is available in reel 25-in., or rotary 20-in. cuts.

A Kohler engine is used to power the new unit, and a large seat is furnished for operator comfort. Attachments are easy to change, cutting height is adjustable, and a lever is provided to throw the reel in and out of gear.

Literature describing the new model B Riding Mower is available from Meade Products Mfg. Co., 220 E. Carthage, Meade, Kans. Write directly, or use the Post Card on the colored page in this section. Circle No. 778.

Catch Basins

CAN NOW BE CLEANED RAPIDLY AND INEXPENSIVELY WITH THE

Pippin

EXCAVATOR

LOWER COST + INCREASED SPEED = GREATER SAVINGS

The Catch Basin Attachment for the PIPPIN Excavator fills a long recognized need for a fast, inexpensive method for cleaning catch basins, which will not tie up a large investment in single-purpose equipment that is to be used only occasionally.

This attachment mounts on a standard PIPPIN Excavator. Maximum efficiency is achieved through complete hydraulic control. With the dipper stick of the Excavator fastened in position, the dipper stick cylinder is now used to operate the cable and sheave mechanism which rapidly lowers the orange peel bucket to a maximum depth of 19½ feet into the catch basin. The bucket, opened and closed by a double acting cylinder, is easily filled and raised to 9 feet above ground for loading directly into a truck.

Mounting or dismounting this attachment is a simple operation, requiring only an hour or so. This means that this versatile Excavator can be kept in continuous use on a wide variety of jobs.

The Most Versatile Piece of Equipment Your Money Can Buy

1. Backhoes 10 ft. deep
2. Backfills
3. Cleans Catch Basins
4. Holds Rock Drill
5. Installs Culverts
6. Digs Drainage
7. Grades Roadsides
8. Cleans Ditches
9. Shovels
10. Loads 12 ft. High
11. Digs Graves
12. Lifts Heavy Pipe

Write For Complete Information

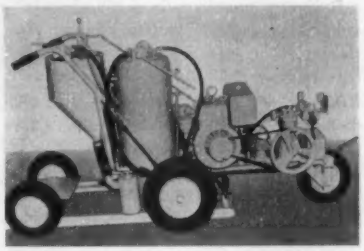
PIPPIN CONSTRUCTION EQUIPMENT, INC.

White River Junction, Vermont

Trailer-Type Unit for Painting Traffic Lines

Painting traffic lines on city streets is faster and easier with this new power-driven, riding-type line marker. The Econo-Liner Model 8088 features a 2-wheel trailer on which the operator rides, and a 10-gallon tank that paints 2 to 5 miles of line per hour. These lines are from 2- to 6-inches wide, however, accessories are available for painting double or skip lines.

A 3.1 hp., one cylinder, 4-cycle gasoline engine with a 50% power reserve, powers the new unit, while a 9.3 CFM displacement compressor delivers a more than adequate amount of air. Also featured are a patented tank cover that locks quickly, an adjustable pressure control safety valve on the air receiver, and air-actuated spray guns.



Controls of the new Econo-Liner Model 8088 are located at the handlebars.

A full description of the Econo-Liner Model 8088 Line Marker, complete with a list of accessories, is available from the Universal Mfg. & Sales Co., 5211 Pacific Blvd., Huntington Park 2, Calif. Write directly, or take advantage of the Post Card on the colored page in this section. Circle No. 810.

Constructing Cast Iron Water Main Crossing Westchester Creek, at Bruckner Boulevard, New York City.

For Permanence

Big Cities Specify

CAST IRON PIPE

More than 95% of the pipe in Water Filtration Plants and Sewage Treatment Plants throughout the nation is Cast Iron Pipe. Because it lasts for centuries and costs less per year of service, it is likewise recognized throughout the world as the standard material for water mains.

This tabulation shows the percentage of Cast Iron Pipe in water distribution systems of 15 of the largest cities, as reported by their Water Departments:

City	*Percent*	*City*	*Percent*	*City*	*Percent*
New York	97.2	Cleveland	98.9	San Francisco	76.8
Chicago	99.9	St. Louis	98.7	Milwaukee	100.0
Philadelphia	98.3	Baltimore	99.7	Buffalo	99.8
Detroit	98.7	Boston	99.8	Washington, D.C.	98.8
Los Angeles	74.0	Pittsburgh	97.9	Minneapolis	95.8

* * * * * *

Woodward Iron Company does not manufacture pipe, but we supply leading Cast Iron Pipe foundries with high grade foundry pig iron from which pipe is made.

WOODWARD IRON COMPANY

WOODWARD, ALABAMA

Tightens Sewer Joints

The successful installation of sewer pipe, particularly under adverse soil conditions or where excessive ground water exists, depends, in part, on extra tight, dependable joints. To tighten these joints, an additional sealing material, Ropax, is introduced by the

Special sewer-joint packing provides additional sealing material in the joint.

Presstite Engineering Co., 3798 Chouteau Ave., St. Louis 10, Mo.

A non-porous sewer-joint packing, Ropax consists of a processed fibrous core, impregnated and saturated with a blend of asphalts. These asphalts contain an inhibitor that prevents the growth of fungi.

Not only does Ropax permit better pipe alignment, but, when caulked back

in the pipe bell, it forms a solid seal impervious to the passage of water. The new sewer-joint packing is available in ⅜-, ½-, and 1¼-inch diameters on easy-to-use spools.

The Presstite Engineering Co. will send full information on request. Write directly, or you may use the Post Card on the colored page in this section. Circle No. 805.

Meet the Federal Sign and Signal Corporation

Stockholders of Federal Enterprises, Inc., 8756 S. State St., Chicago 19, Ill., have voted to change the company name to Federal Sign and Signal Corp., Sydney K. Schiff, Federal's Chairman, reported recently. The 53-year-old firm was established in 1901 as the Federal Electric Co., and continued under that name until 1948. The company's Signal Division produces electric sirens, horns, whistles, and warning lights.

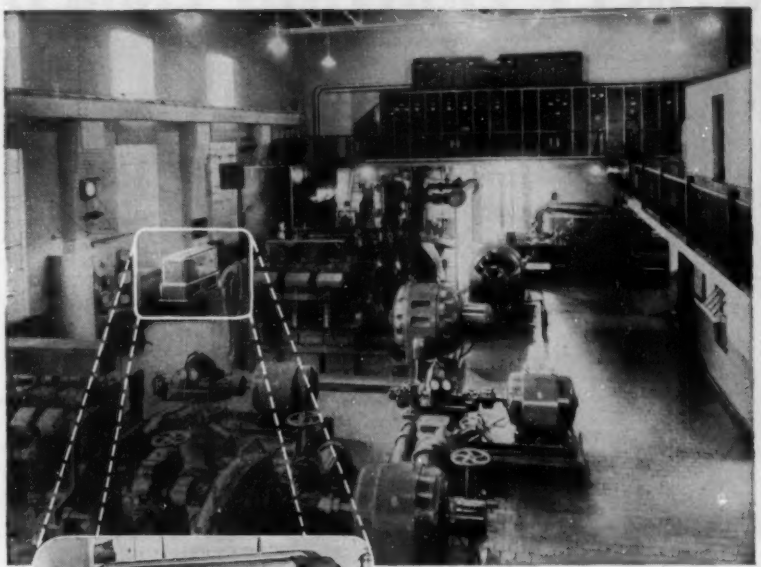
One of the newer developments of the Federal Sign and Signal Corp. is a new electric sign, reported the largest in the nation, for Motorola, Inc. Designed in the shape of a giant television set, the sign weighs some 200 tons and is as tall as a 14-story building. It is located near Chicago's famed Outer Drive Bridge, just east of the Loop. Another Federal announcement concerns the promotion of William W. Scott from his position as executive vice-president to president of the firm.

GE Motors and Controls for New York Subway

One hundred electric propulsion units for subway cars to be built by the American Car and Foundry Co., 1501 E. Ferry Ave., Detroit 11, Mich., and manufactured by the General Electric Co. of Schenectady 5, N. Y., are expected to be delivered before the end of the year, according to G. W. Wilson, general manager of the General Electric Company's Locomotive and Car Equipment Department.

Designed for series-parallel operation and dynamic braking, the first units are expected to be delivered to the car builder by July, Mr. Wilson said. A feature of the propulsion units places the entire control in one package for mounting under the car. Sliding covers on the package make inspection and maintenance easier.

How Dubuque insures uninterrupted operation of its pumping station



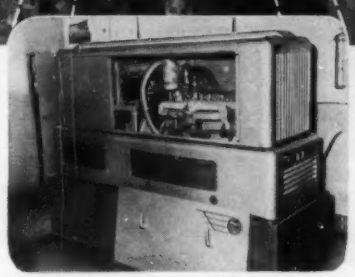
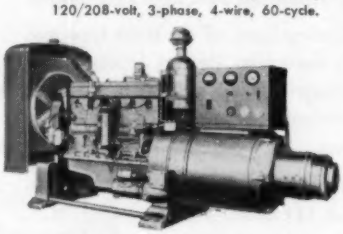


Photo of Dubuque (Iowa) installation shows Onan Model 25HN, 25KW, 120/208-volt, 3-phase, 4-wire, 60-cycle.



New Onan 50KW Standby Plant

The Onan Model 50KA is designed for emergency use in pumping stations, sewage lift stations, civil defense or any installation with heavy load requirements. Write for specifications.

Continuous operation of Dubuque's Eagle Point water pumping station is assured during electric power interruptions by an Onan 25,000-watt, Model 25HN-4R Standby Plant. Five times since the Onan unit was installed in April, 1952, it has automatically cut in and furnished all the electric power for the following essential equipment: One ¼ h.p. electric motor for the station's oil burner, one ¼ h.p. electric motor for the condensate pump, four ⅝ h.p. and two ¼ h.p. motors for heating unit blowers, and thirty 200-watt lights for lighting the building.

The gasoline-driven standby plant also powers this additional equipment during extreme emergencies such as floods: Two 5 h.p., three 1 h.p. and six ⅓ h.p. electric motors for sump pumps and one 5 h.p. motor for priming the main pumping units.

Dubuque is one of the many communities and municipalities throughout the United States that is protected against power outages by Onan Standby Electric Power.

Write for Standby Folder and Engineering Assistance

Onan ELECTRIC PLANTS

D. W. ONAN & SONS INC.

8363 University Avenue S. E. • Minneapolis 14, Minnesota

Better light in the nation's capital!

AMPLEX STREET LIGHTING LAMPS

Amplex Street Lighting Lamps bring improved lighting on Constitution Ave. (above) and on approach to So. Capital St. Bridge (right). Installation made by Potomac Electric Power Company.

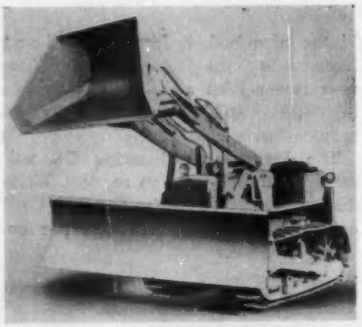
FROM ONE COAST TO THE OTHER, Amplex Street Lighting Lamps are the fastest-growing choice of cities and utilities. Experience shows that these lamps give outstandingly superior service . . . and so they should! They're designed and premium-built to withstand the vibration and jolts of fast-moving traffic . . . to burn longer and to maintain their high light output.

In the Amplex line there's a street lighting lamp of the right type and wattage for every purpose. And for truly maximum life and dependability there's nothing equal to Amplex *Weatherproof Bulbs*. They're made of moisture-resistant "hard glass" that survives the severest climatic conditions and cuts service-costs to new lows.

It will pay you to get all the facts about Amplex Street Lighting Lamps. Just write **Amplex Corporation, Dept. K-4, 111 Water St., Brooklyn 1, N. Y.**

AMPLEX

Sealed-Beam Reflector Lamps, Colorbeam Lamps, Spotlites and Floodlites, Industrial Infra-Red Heat Lamps, Vibration and Rough Service Lamps, Street Lighting Lamps, Traffic Signal Lamps, Incandescent Lamps, Fluorescent Tubes, Display Accessories.



Transport this Terratrac machine on any light dump or stake truck.

Tractor Provides Variety Operation

"Two full tractors in one," is how the American Tractor Corp. describes the new Terra-Builder. The unit features a 7 foot-4 inch, heavy-duty angledozer or 6 foot bulldozer attachment, plus a ¾-yd. digging bucket that operates as a digging loader, leveler, materials handling loader and backfiller. This special bucket is tapered for self-cleaning in any soil.

The independent angledozer or bulldozer attachment incorporates close-coupled, direct hydraulic linkage for better performance when pushing heavy loads, land leveling or grading.

Heavier than previous Terra Builder models, the new unit is still light enough to be moved on any dump or stake truck. It is fully described in literature from the American Tractor Corp., Churubusco, Ind. Write, or use the Post Card on the colored page in this section. Circle No. 799.

District Managers Attend Sales School

District office managers and body and hoist sales representatives of The Heil Co., 3000 W. Montana St., Milwaukee 1, Wis., recently attended a 3-day sales school at the Heil Milwaukee plant, according to W. A. Carlson, Body and Hoist Division sales manager. Lectures stressed sales features of the new Heil Colecto-Matic 16-cubic-yard garbage-refuse body, the improved Heiloader elevating truck tailgate, and the new 2426 lightweight, direct action hoist.

A series of "lessons" to thoroughly indoctrinate distributor salesmen on the various sales features were given by H. J. Row, Body and Hoist sales promotion manager. Advertising plans for 1954 were handled by D. E. Fricker, advertising manager.

Traffic-Line Markers Tour the Nation

Municipal officials and others interested in traffic improvement now have the opportunity to see for themselves the latest developments in traffic marking techniques and equipment.

Early last month, Wald Industries, Inc. of Huntingdon, Pa., organized a "caravan" of striping machines, which is presently traveling from city to city. Included in the "caravan" are the Wald Model 345 Truck-O-Liner, for street, highway and airport centerline marking; Models 16, 12 and 8T Reflecto-Liners; and the new Reflecto-liner Jr., designed for marking parking stalls, lots and crosswalks.

Touring with the Wald "caravan" are representatives of the company, who demonstrate the machines, showing the correct way to apply marking materials. At the same time they explain the practical features of new striping techniques, stressing fast, low-cost operation.

Sweeps and Loads Refuse

A complete line of Boston Load Sweepers for use with Hough Payloaders is announced by the Sweeper Div., Clark-Wilcox Co., 118 Weston Ave., Boston 34, Mass. This combination broom and bucket is hydraulically operated. The refuse is swept directly into an attached bucket, then dumped easily into a truck.

An interesting feature of the new unit is its reversible broom rotation, enabling you to sweep the refuse into piles. The Load Sweeper cleans close to the curb and, on surface treatment jobs, it sweeps up excess pea stone.

Available in four sizes from 48 to 96 inches, there is a Load Sweeper for every Payloader. Furthermore, each unit is easy to repair and features low maintenance costs.

For a full description of the Boston Load Sweeper, write the manufacturer directly, or you may use the Post Card on the colored page in this section. Circle No. 812.

A SCHRAMM
Pneumatractor
WILL
PUSH • PULL • POWER
PROVIDE AIR

It will PUSH front end loader with bucket (illustrated), or angle dozer blade, rotary sweeper, snow plows, etc., . . . PULL anything a wheel tractor will, with either front or rear winch . . . POWER any hydraulically, mechanically and pneumatically operated equipment such as back hoe (illustrated), post hole digger, scaffold boom, etc., . . . PROVIDE AIR for any pneumatic tools that can be operated from a 105 C.F.M. AIR COMPRESSOR.

FOR FULL DETAILS WRITE TODAY

SCHRAMM, INC.

The Compressor People • WEST CHESTER • PENNSYLVANIA

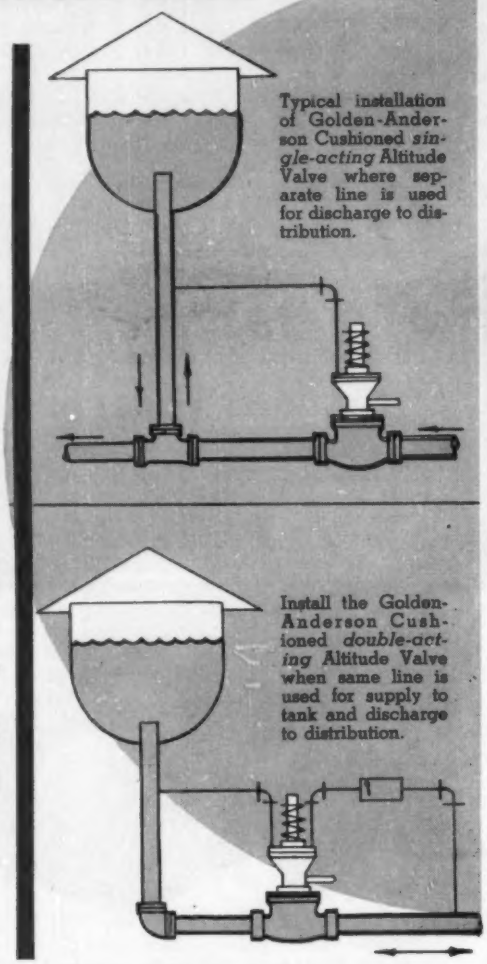
GOLDEN-ANDERSON

AUTOMATIC *Cushioned*

ALTITUDE VALVES

Assure Accurate Water Level Control

Under any Climatic Conditions!



Typical installation of Golden-Anderson Cushioned *single-acting* Altitude Valve where separate line is used for discharge to distribution.

Install the Golden-Anderson Cushioned *double-acting* Altitude Valve when same line is used for supply to tank and discharge to distribution.

Golden-Anderson Altitude Control Valves require no floats or complicated fixtures, can be quickly and easily installed, either above or below ground, and maintain water levels in reservoirs and tanks within 3" to 12" variation.

Write for bulletin W-4—it contains the technical facts you want to know.

GOLDEN ANDERSON *Valve Specialty Company*

1200 RIDGE AVENUE, PITTSBURGH 33, PA.

DESIGNERS AND MANUFACTURERS OF:

Non-Return Valves • Altitude Valves • Solenoid Valves • Engine Stop Valves • Swing Check Valves
Float Valves • Pressure Reducing Valves • Surge Relief Valves for air, gas, steam and water

About People

You know — or — should know

The recent annual meeting of the board of directors of **International Incinerators, Inc.,** Atlanta, Ga., saw the election of Frank M. Tobin as new vice-president, reports R. G. Hicklin, president of the firm. Mr. Tobin is expected to continue his duties as general manager, devoting his time to sales contacts in the field.

At the **City Tank Corp.,** Corona, N. Y., Arthur L. Hettler, former assistant general manager, has been promoted to vice-president and works manager, while Paul H. Brown, former sales manager, takes over as vice-president in charge of sales. Both newly created positions are part of the company's expansion program under the guidance of its president, John G. Hagan, Jr.

Arthur L. Hettler **Paul H. Brown**

When H. B. Spain left his 24-year position as president of the **Seagrave Corp.,** Columbus, Ohio, to become chairman of the firm's board of directors, he was succeeded as president by Lester Stevenson. Mr. Stevenson, a former vice-president of the company, is well versed in all phases of Seagrave operations.

Newest member of the **Neptune Meter Company's** sales organization is Robert E. Clancy, who will represent the firm in Wisconsin and upper Michigan. The company's headquarters are in New York City.

Succeeding Harry J. Deines as general advertising manager of the **Westinghouse Electric Corp.,** Pittsburgh, Pa., is Roger H. Bolin, associated with the company

for the past 29 years. Mr. Bolin is former assistant to J. M. McKibbin, vice-president and general manager in charge of the Westinghouse Consumer Division.

T. J. Ross, senior partner in the public relations firm of **Ivy Lee and T. J. Ross,** informs us that two staff members, Carl C. Dickey and Richard T. Nimmons, have been admitted to partnership in the firm. In addition, a new managing partner, John L. Dupree, has been appointed.

C. A. Spaulding, Jr., head of **C. A. Spaulding, Jr. and Associates,** Ralston Neb., is scheduled to represent **American Well Works, Inc.,** in the states of Nebraska and Iowa. Located in Aurora, Ill., American Well Works engineers and manufactures waste treatment, water purification and pumping equipment.

From **Mueller Co.,** Decatur, Ill., comes news of three appointments: W. R. Augustine, Dan R. Gannon and A. D. Parks, to fill three newly created positions. Mr. Augustine takes over as Central sales manager; Mr. Gannon as Southwest sales manager; and Mr. Parks as manager of Mueller's Southeast sales district.

W. R. Augustine

Dan R. Gannon

A. D. Parks

John Barclay, general sales manager of **The Heil Co.,** Milwaukee, Wis., reports a new sales manager, Roland Karste, to head the company's Detroit District Office. Mr. Karste succeeds the late Fred W. Ehlert.

New president of the **Internal Combustion Engine Institute,** Chicago, Ill., is J. E. Heuser, engine division sales manager of the **Le Roi Co.,** a subsidiary of the **Westinghouse Air Brake Co.,** Milwaukee, Wis. Other officers elected at the Institute's annual meeting were: vice-president, B. G. VanZee, chief engineer, **Minneapolis-Moline Co.,** of Minneapolis, Minn.; secretary, H. W. Smith, consulting engineer, engine division, **Caterpillar Tractor Co.** of Peoria, Ill., and treasurer, J. D. Cook, secretary-treasurer of the **Hercules Motor Corp.,** of Canton, Ohio.

Latest addition to **Wald Industries, Inc.,** Huntingdon, Pa., is Robert S. Holmes, recently appointed executive assistant to the president. Mr. Holmes comes to the company directly from the Engineering Office of the Federal Civil Defense Administration in Washington, D. C., where for the past three years he has served as general engineer and director of the Emergency Restoration Division.

Robert S. Holmes

After nine years with the **LeTourneau-Westinghouse Co.,** Peoria, Ill., H. R. Powers joins the **Koehring Co.,** of California, a subsidiary of Koehring Co., Milwaukee, Wis., as new general manager. He'll locate at the company's main office in Stockton, Calif.

P. S. Wilson is scheduled to represent the **Welsbach Corp.,** Philadelphia, Pa., in the sale of water works brass goods and corporation tapping machines made by the Kitson Div. He'll carry the Welsbach-Kitson line to the eastern part of New York State, Northern New Jersey and a portion of Connecticut.

When Harold A. Jones takes over as executive assistant to Eugene S. Goebel, national sales manager of **Motorola Communications and Electronics Inc.,** Chicago, Ill., he will retain his present position as head of Motorola's Technical Information Center. Mr. Jones has been with the firm since 1946.

Robert F. Moody, Eastern division sales manager of the **Hyster Co.,** Portland, Ore., reports three new sales appointments, including Jack Wright, Northwestern district manager; James N. Rector, manager of the Southeast district; and Robert Hile, general manager of the Hyster retail store in Chicago.

From W. W. Kingman, sales manager for the **Highway Equipment Co., Inc.,** Cedar Rapids, Iowa, we learn of the appointment of Philip Terry as new Eastern district manager for the firm. With headquarters in Carlisle, Pa., he will supervise the sale of spreaders and bulk-delivery equipment in the States of Pennsylvania, Maryland, Delaware, Virginia, West Virginia, New York, New Jersey, Rhode Island, Connecticut, Vermont, Massachusetts, New Hampshire, and Maine.

Philip Terry

The Atlas Mineral Products Co., of Mertztown, Pa., has a new president—Dr. Raymond B. Seymour, to succeed George L. Wirtz, who was recently promoted to chairman of the board. Dr. Seymour, third president of the 64-year-old firm, joined Atlas in 1939. He is the author of some 50 patents and more than 100 technical publications, as well as co-author of the *National Paint Dictionary,* 3rd Edition, 1948.

Scheduled to manage all advertising for **Colt's Mfg. Co.,** Hartford, Conn., is Richard B. Almy, recently connected with the Connecticut firm of **Landers, Frary & Clark.** According to A. K. Marsters, director of Colt's sales, Mr. Almy will handle the advertising and sales promotion activities of the firm's Arms Div., Autosan Div., Packaging Machinery Div. and Plastics Div.

Louis F. Frazza will manage the direct sales operations of the new Marketing Section of **Johns-Manville's** Transite Pipe Department, assisted by Otto A. Wirsig, staff manager. The section's dealer sales operations will be headed by Edward C. Koch and his assistant, Staff Manager James R. Allen, Jr. Main offices of Johns-Manville are located in New York City.

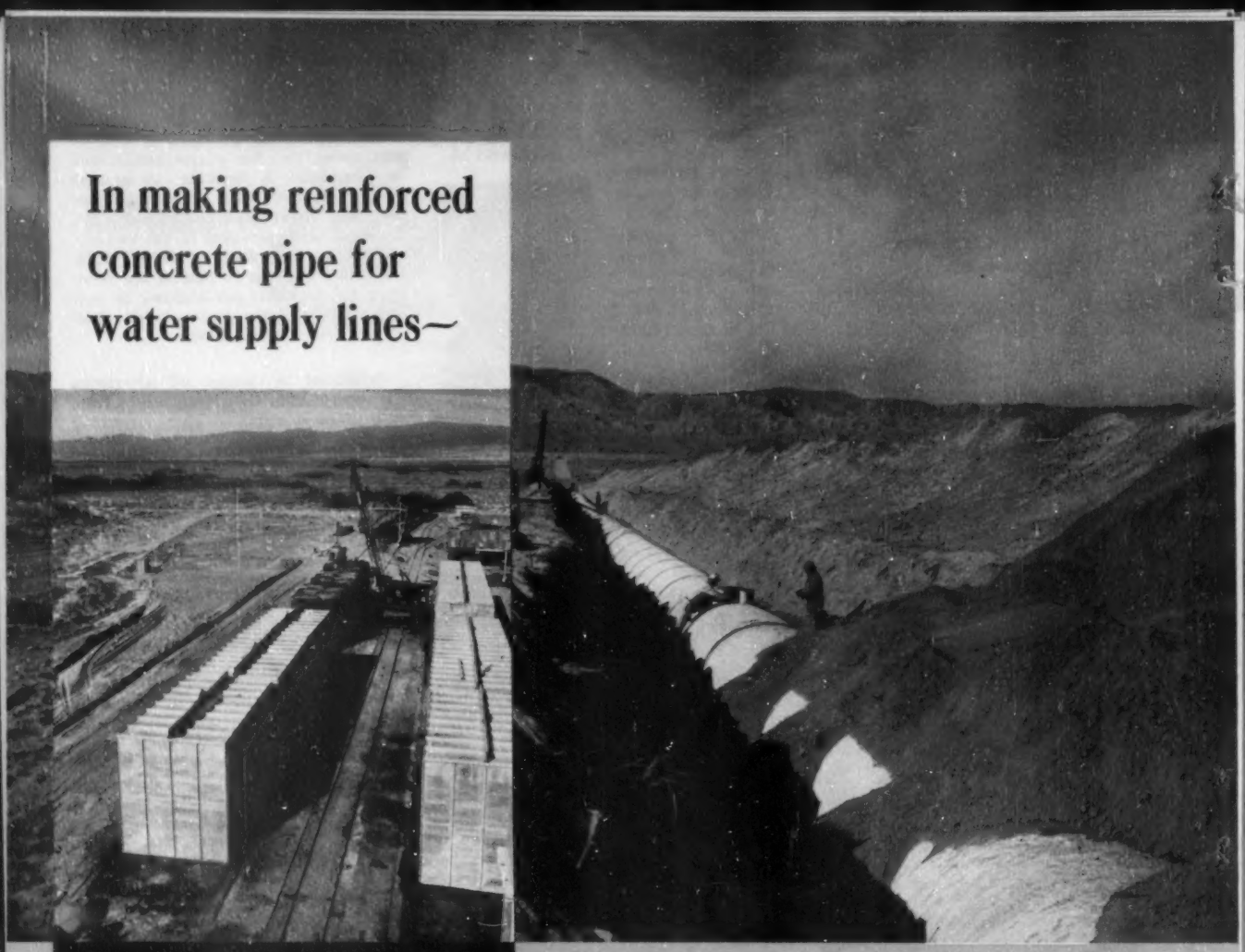
After 13 years with **The Baker Mfg. Co.,** Springfield, Ill., Bert M. Constant has been elevated to assistant sales manager, a position formerly held by George D. Phares. Mr. Phares, we learned, has been appointed works manager of a new Baker plant that is presently under construction in Beardstown, Ill.

B. M. Constant

At the Crusher, Screen, and Process Machinery Div. of the **Nordberg Mfg. Co.,** Milwaukee, Wis., Division Sales Manager Jack B. Bond will assume the additional duties of assistant general manager, while Howard M. Zoerb, former administrative manager, becomes divisional consulting engineer. According to Nordberg president, Robert E. Friend, these changes were necessitated by the recent retirement of Oscar Gruender as Division consulting engineer.

News from Nelson Thompson, vice-president and sales manager of the **Homelite Corp.,** Port Chester, N. Y., tells of a new district sales manager for Homelite's Chicago office. The new official, R. J. Marschalk, is expected to supervise the firm's field representatives in Milwaukee, Wis., and Bloomfield and Melrose Park, Ill. Mr. Thompson further announces the appointment of R. S. Kennedy to manage Homelite's Melrose Park branch office.

In making reinforced concrete pipe for water supply lines—



permanent plants and jobsite plants put us close to any Western project

If your pipeline project is anywhere in the Western States—there is an American plant to serve you . . . equipped to supply quality pipe products . . . organized for efficient service.

Most job requirements can be met by existing plants strategically located throughout the West, but where distance and transportation factors exist and where the quantity of pipe involved is sufficient, it is frequently advantageous to set up pipe-making plants near the jobsite.

In the past few years American Pipe and Construction Co. has established many jobsite plants throughout the West. Substantial savings have been realized, for customers and manufacturer alike, by erecting these plants close to the project.

Wherever your next project is to be, we would like to help you plan it. An inquiry directed to any of our regional offices will receive prompt attention.

NOW AVAILABLE

New Bulletin No. 12

"Representative List of Installations"

. . . indicative of the wide scope of American activities. Address requests to P. O. Box 3428, Terminal Annex, Los Angeles 54, California.

American PIPE AND CONSTRUCTION CO.

Main Offices and Plant: 4635 Firestone Blvd., South Gate, California
District Sales Offices and Plants: Hayward • San Diego • Portland, Ore.
Concrete pipe for main water supply lines, storm and sanitary sewers, subaqueous pipe lines

The American City Professional Service Directory

AIR POLLUTION CONTROL
AUSTIN C. DALEY
Air Pollution Engineer
City of Providence, R. I.
Consultant—Surveys and Solutions: Smoke, Dust and Fumes
Municipal Incinerator Design and Correction
29 Weybosset St. Providence 3, R. I.

ALBRIGHT & FRIEL, INC.
Consulting Engineers
Water, Sewage and Industrial Waste Problems. Airfields, Refuse Incinerators & Power Plants, Industrial Building. City Planning, Laboratory, Reports, Valuations.
121 South Broad St. Philadelphia 7

ALLEN & HOSHALL
Consulting Engineers
Mechanical—Civil—Electrical
Municipal Improvements
65 McCall Place
MEMPHIS, TENNESSEE

ALVORD, BURDICK & HOWSON
ENGINEERS
Water Works — Sewage Disposal
Water Purification — Drainage
Flood Relief — Appraisals
Sewerage — Power Generation
20 North Wacker Drive, Chicago 6, Ill.

ABRAMS AERIAL SURVEY CORPORATION, Lansing, Michigan
One-quarter Century of Experience
Planimetric and topographic maps, controlled mosaics, and large-scale atlas sheets. . .
The complete job—photography—compilation—to finished survey.
Oblique photographs for pictorial views—for project presentation.
AERIAL SURVEYS — OBLIQUE PHOTOGRAPHY

The American Public Utilities Bureau
Organized to assist municipalities and public groups in utility valuations, rates, franchises, accounting and surveys.
John Bauer, Ph.D., Director
280 Broadway, New York City 7

The AMERICAN APPRAISAL Company
Milwaukee 2, Wis. • New York • Chicago • and other Principal Cities
Appraisals of Municipal Properties: Schools, Utilities, Hospitals, City and County Administrative Buildings For Insurance and Accounting Purposes

E. T. ARCHER & COMPANY
E. T. Archer — E. E. Hagen
Consulting Engineers
Organized 1907
Reports — Designs — Supervision — Water Works — Sewer Disposal — Power Systems
Railway Exchange Bldg.
Kansas City 6, Mo.

Topographic Maps
Air Photography
Tax Maps
Photographic Mosaics
Surveys

Jack Ammann
PHOTOGRAMMETRIC ENGINEERS
BROADWAY AT TENTH · SAN ANTONIO 5, TEXAS
AIR SURVEYS—MAPS
EASTERN OFFICE—P. O. BOX 411, MANHASSET, N. Y.

FOR
Cities
Counties
States
Consulting Engrs., etc.

JOHN J. BAFFA
Consulting Engineers
Drainage, Sewerage, Sewage and Wastes Treatment
Water Supply and Water Purification
Investigations — Sanitary Planning
Reports — Plans and Specifications
75 West St. New York 6, N. Y.

B & B ENGINEERING CORPORATION
Fire Alarm and Traffic Signal — Engineers and Consultants
P. O. Box 31 — Norwood, La.
Branches: New York, N. Y.—Baton Rouge, La.—St. Louis, Mo.

SCOTT BAGBY
Modern Comprehensive City and Area Planning and Development
"Plans Which Can be Carried Out"
42 Church St., Montclair, N. J.
1500 Margaret S.E., Grand Rapids, Mich.

BIGELOW, KENT, WILLARD & COMPANY
Public Administration Consultants
Surveys of Federal, State and Municipal Governments
Organization Surveys — Accounting—Auditing—Budgeting — Wage & Salary Compensation Plans
New York — Boston

MICHAEL BAKER, JR., INC.
The Baker Engineers
Civil Engineers — Planners — Surveyors — Municipal Engineers — Airport Design — Sewage Disposal Systems — Water Work Designs and Operations — Consulting Services—Surveys and Maps
Branch Office—Jackson, Miss.
Home Office—Rochester, Pa.

BLACK & VEATCH
Consulting Engineers
Sewerage, Sewage Disposal, Water Supply, Water Purification, Electric Lighting, Power Plants, Valuations, Special Investigations, and Reports.
4706 Broadway — Kansas City 2, Missouri

S. R. DE BOER & CO.
INDUSTRIAL TOWNS, TRADE TERRITORY PLANNING
City and County Zoning, Street Plans, Economic Plans, Park and Recreation Plans, Civic Beautifying, Urban Redevelopment, Subdivisions, Shopping Centers
CONSULTATIONS and LECTURES
515 E. 11th Ave., Denver 10, Colorado

HENRY N. BOUCHER ASSOCIATES
CONSULTING ENGINEERS
TOWN PLANNERS — LANDSCAPE ARCHITECTS
ORGANIZATION & DESIGN OF LAND AREAS & COMPONENTS FOR DEVELOPMENT
AIRPORTS, HIGHWAYS, GRADE SEPARATIONS — MASTER PLANS, SHOPPING CENTERS, HOUSING REDEVELOPMENT — GOLF COURSES, PARKS, POOLS, PLAYGROUNDS
4801 CONNECTICUT AVE. — WASHINGTON 8, D. C.

BARKER & WHEELER
36 State Street — Albany, N. Y.
11 Park Place — New York City 7
Sewage Disposal — Water Supply — Sewerage
Public Utility and Industrial Valuations and Rates
Power

BROWN & BLAUVELT
Consulting Engineers
Expressways, Parkways, Highways—Bridges, Dams, Airports
Industrial Plants, Site Planning—Preliminary Reports
Supervision of Construction — Material Controls, Soils and Concrete Testing
Municipal Engineering Services — Tax Maps, Surveying
468 Fourth Ave., New York 16, N. Y. — 140 Eighth St., Pittsburgh, Pa.

W. I. BARROWS & ASSOCIATES
Consulting Engineers
Mechanical—Civil—Electrical—Hydraulic
Industrial & Municipal Betterment & Improvements
1169 Reibold Bldg., Dayton 2, O.

E. D. BARSTOW
Sanitary Engineer
Water Supply—Water Treatment
Sewerage—Sewage Treatment
Reports—Plans—Construction
163 N. Union St., Akron 4, Ohio

HARLAND BARTHOLOMEW AND ASSOCIATES
City Planners — Civil Engineers
Landscape Architects
Atlanta, Ga. — St. Louis, Mo.
Honolulu, T. H.

THE HARWOOD BEEBE CO.
Municipal and Civil Engineers
Water Supply and Purification, Sewerage and Sewage Treatment, Streets, Light & Power, Airports
171 Pine St.
Spartanburg, S. C.

Beling Engineering Consultants
Designers of
Water and Sewer Systems for Municipalities
Rated in Dun & Bradstreet
MOLINE, ILLINOIS
Peoria Champaign Burlington

HOWARD K. BELL
Consulting Engineers
G. S. Bell C. G. Gaither J. K. Latham
Water Works — Sewage Disposal
Water Purification — Sewerage
Streets — Refuse Disposal
Industrial Wastes
853 S. Limestone St. Lexington, Ky.

RUSSELL VANNEST BLACK
Planning Consultant
Comprehensive Plans and Reports • Zoning and Subdivision-Control Ordinances • Redevelopment • Site Plans for Housing, Parks and Institution Grounds • Advisory Services.
New Hope, Pa.

CLINTON L. BOGERT ASSOCIATES
Consulting Engineers
Clinton L. Bogert — Ivan L. Bogert
Water and Sewage Works
Refuse Disposal — Industrial Wastes
Drainage — Flood Control
624 Madison Ave., New York 22, N. Y.

LOUIS P. BOOZ
Consulting Engineers
Incineration
Sanitation
Water Treatment
Industrial Wastes
51 E. 42 St., New York 18, N. Y.

Bowe, Albertson & Associates
Engineers
Water and Sewage Works
Industrial Wastes—Refuse Disposal—Municipal Projects
Airfields—Industrial Buildings
Reports—Designs—Estimates
Valuations—Laboratory Service
110 William St. New York 38, N. Y.

Briley, Wild & Associates
Consulting Engineers
Reports — Supervision
Designs — Appraisals
Consultation
8 N. Wild Olive Avenue
Daytona Beach, Florida

BUCK, SEIFERT AND JOST
Consulting Engineers
Water Supply, Sewage Disposal, Hydraulic Developments, Valuations and Reports.
Chemical and Biological Laboratories.
112 East 19th Street — New York 3, N. Y.

FRANCIS H. BULOT CONSULTING ENGINEERS, INC.
• Water Supply & Purification • Flood Control & Drainage • Subdivisions • Design
• Sewerage & Sewage Treatment • Bridges & Highways • City Planning • Administration
• Refuse Disposal & Incineration • Airports • Investigations & Reports • Finance
Los Angeles 13, 411 West 5th Street
Pasadena 1, California, 1041 East Green Street
Costa Mesa, 116 East Broadway

BRAZIL CHIMNEY DIVISION
WILLIAM E. BURGER COMPANY
CONTRACTORS • ENGINEERS
Designers and Builders of
Public Buildings • Churches • Industrial Buildings
Steam cleaning, sand blasting, waterproofing, caulking, concrete restoration
144 West 47th Street — BOulevard 8-7709 — Chicago 9, Ill.

Philip Burgess
Chester A. Niple
Ben K. Bare
Clayton C. Bull
B. F. Hatch
Raymond Fuller
Tahlman Krumm
R. E. Peters
Robert Wolfe
BURGESS & NIPLE
CIVIL AND SANITARY ENGINEERS
WATER AND SEWAGE CONSULTANTS
2015 WEST FIFTH AVENUE — COLUMBUS 12, OHIO
Design
Construction
Reports
Planning
Valuations
Rates
Supervision
Laboratory

RALPH H. BURKE, INC.
Consulting Engineers
Plans — Construction Supervision — Reports
Complete Architectural and Engineering Services
Expressways — Grade Separations — Municipal Works
Underground Garages — Parking Structures — Traffic Studies
Airports and Air Terminal Buildings — Parks — Field Houses — Shore Protection
20 North Wacker Drive — Chicago 6, Illinois

BURNS & McDONNELL
Consulting and BMD *Designing Engineers*
Kansas City 2, Mo.
P. O. Box 7088
Cleveland 14, Ohio
1404 East 9th St.

THE J. M. CLEMINSHAW COMPANY
"Our 31st Year"
APPRAISALS—REVALUATIONS
Specializing in the revaluation of Real Estate and Personal Property for local tax equalization purposes. Illustrated brochure on request.
UNION COMMERCE BUILDING, CLEVELAND, OHIO

CHAS. W. COLE & SON
ENGINEERS - ARCHITECTS
MUNICIPAL — INDUSTRIAL — COMMERCIAL
WATER SUPPLY — SEWERAGE — SEWAGE TREATMENT
220 W. LaSalle St. — Phone: 4-0127 — South Bend, Indiana

COLE • LAYER • TRUMBLE COMPANY
REVALUATIONS CLT APPRAISALS
11 W. Monument Ave • Dayton 2, Ohio
Municipal and County Tax Revaluations
Descriptive Material upon Request

CONSOER, TOWNSEND & ASSOCIATES
Water Supply, Sewerage, Flood Control and Drainage, Bridges, Express Highways, Paving, Power Plants, Appraisals, Reports, Traffic Studies, Airports, Gas and Electric Transmission Lines.
351 EAST OHIO STREET — CHICAGO 11, ILLINOIS

FLOYD G. BROWNE AND ASSOCIATES
Consulting Engineers
Water Works, Sewerage, Power and Industrial Plants, Industrial Waste, Laboratory, Reports, Design, Supervision.
123 W. Church St., Marion, Ohio

CAMP, DRESSER & McKEE
Consulting Engineers
Water Works, Water Treatment Sewerage, Sewage Treatment, Municipal, Industrial Wastes, Investigations, Reports, Design, Supervision, Research, Development, Flood Control.
6 Beacon Street — Boston 8, Mass.

Capitol Engineering Corp.
Engineers—Constructors—Management
Water Works, Sewage Disposal, Airports, Dams and Bridges, Roads and Streets, Planning, Design and Surveys.
Dillsburg, Pa.—Rochester, N. Y. Dallas, Texas

MATTHEW CAREY
Municipal Finance Consultant
Specializing in Financing Off-Street Parking Facilities
Financial Advisor for Highland Park, Royal Oak, Wyandotte, Michigan and Kankakee, Illinois Automobile Parking System Revenue Bond Issues.
Box 3703 Kercheval Station
Detroit 15, Mich.

COTTON, PIERCE, STREANDER, INC.
Associated Engineering Consultants
132 Nassau Street, New York 7, N. Y. — P. O. Box 198, Hyde Park 36, Mass.
1405 W. Erie Ave., Philadelphia 40, Pa. — 55 Caroline Rd., Gowanda, N. Y.
Water Supply, Treatment, Distribution—Sewage, Sewage Treatment, Refuse Disposal, Air Pollution, Power Plants, Incinerator Plants. Reports, Plans, Supervision—Laboratory Service

THE CHESTER ENGINEERS
Water Supply and Purification
Sewage and Industrial Waste Treatment—Power Plant—Incineration—Gas Systems
Valuations—Rates—Management
Laboratory—City Planning
210 E. Park Way, Pittsburgh 12, Penna.

DAMON & FOSTER
Consulting Civil Engineers and Surveyors
Water Supply, Sewerage, Sewage Disposal, Surveys, Land Subdivision, City and Town Planning, Reports, Design, Supervision.
Sharon Hill — Pennsylvania

WILLIAM G. CHRISTY
Consulting Engineer
Air Pollution Control
Combustion — Smoke Control
34 Park Row, New York 38, N. Y.

DE LEUW, CATHER & COMPANY
Consulting Engineers
Public Transit, Traffic and Parking Problems
Railroads — Subways — Grade Separations — Tunnels
Major Thoroughfares — Power Plants — Expressways — Municipal Works
150 North Wacker Drive, Chicago 6, Ill. — 79 McAllister Street, San Francisco 2, Calif.

C. C. COLLINGS & CO., Inc.
Financial Consultants
Specialists in Direct Obligation, Revenue & Municipal Authority Financing
Fidelity-Philadelphia Trust Bldg.
Philadelphia (9), Penna.

EDWARDS, KELCEY AND BECK
Consulting Engineers
Surveys — Reports — Economic Studies — Transportation, Traffic and Parking Studies — Design — Supervision — Management — Port and Harbor Works — Terminals — Expressways — Highways — Grade Separations — Bridges — Tunnels — Water Supply
3 William Street, Newark 2, N. J.
New York — *Boston* — *Philadelphia*

COMMUNITY PLANNING ASSOCIATES, INC.
● Comprehensive Plans ● Zoning Ordinances and Subdivisions Regulations ● Basic Planning Studies ● Site Plans for Subdivisions, Shopping Centers, and Industrial Districts ● Surveys and Maps ●
92A Nassau Street — Princeton, N. J.

ELECTRICAL TESTING LABORATORIES, INC.
Electrical and General Testing—Inspections—Research—Certification
2 EAST END AVENUE AT 79th STREET, NEW YORK 21, N. Y.
BUtterfield 8-2600

DICKINSON & WHITE
ENGINEERS—SINCE 1909
Design and Supervision of Municipal Improvements — Water Supply & Purification — Sewerage and Sewage Disposal — Reinforced Concrete and Structures — Reports, Valuations and Appraisals
115 N. Spring St., Little Rock, Ark.

FAIRCHILD AERIAL SURVEYS, INC.
Photogrammetric Engineers
Topographical Maps, Cadastral Maps, Photographic Mosaics
Aerial Photography in All Phases . . . Nation-wide Service
(26 years' experience supplying city and county map needs)
Western Division: 224 E. 11th St., Los Angeles 15, Calif.
Eastern Division: 21-21 41st Ave., Long Island City 1, N. Y.

GEORGE F. EMERY
Planning & Zoning Consultant
Comprehensive Community Plans
Special Studies — Reports — Expert Testimony — Housing — Redevelopment Parking
2624 N.E. 24 St., Ft. Lauderdale, Fla.

Established 1913
WALTER H. FLOOD & CO.
CHEMICAL ENGINEERS
INSPECTION AND TESTING OF MATERIALS AND STRUCTURES
STREETS — ROADS — AIRPORTS
BUILDING AND GENERAL ENGINEERING CONSTRUCTION
Resident Inspection—Chemical & Physical Tests—Soil Boring & Investigation—Concrete Core Cutting
SPECIFICATIONS — REPORTS — RESEARCH
6102 S. BLACKSTONE AVENUE — CHICAGO 37, ILL.

Fay, Spofford & Thorndike
Engineers
Airports—Bridges—Turnpikes
Port Developments—Water Supply
Drainage—Sewerage
Commercial Buildings
BOSTON — NEW YORK

Ford, Bacon & Davis
Design — *Construction* — Engineers — *Reports* — *Valuation*
New York • Chicago • Los Angeles

Finkbeiner, Pettis & Strout
Carleton S. Finkbeiner — C. E. Pettis — Harold K. Strout
Consulting Engineers
Reports Designs Supervision
Water Supply, Water Treatment, Sewerage, Sewage Treatment, Wastes Treatment, Valuations & Appraisals.
518 Jefferson Avenue — Toledo 4, Ohio

GANNETT FLEMING CORDDRY & CARPENTER, INC.
Engineers
Dams, Water Works, Sewage, Industrial Wastes & Garbage Disposal, Highways, Bridges & Airports, Traffic & Parking—Appraisals, Investigations and Reports.
HARRISBURG, PENNA.
Pittsburgh, Pa. — Daytona Beach, Fla. — *Branch Offices* Chesapeake, W. Va. — Philadelphia, Pa. — Pleasantville, N. J.

"WHO'S WHO"
City Departments can depend upon this Directory as a thoroughly reliable "Who's Who Among Consulting Engineers Specializing in Municipal Work."

HARRY D. FREEMAN
Planning Consultant
Development of master plans for cities and environs; design of new towns and other land planning; special reports on zoning, recreation, commercial centers, industrial areas and related subjects.
3565 S.W. Council Crest Drive
Portland 1, Oregon

THE HALLER TESTING LABORATORIES, INC.
Consulting-Testing-Inspection
801 Second Ave., New York, N. Y.
104 Cummington St., Boston, Mass.
336 Leland Ave., Plainfield, N. J.

Frank E. Harley & Associates
Consulting Engineers
Water Works — Sewage — Highway—Municipal Problems
Harley Bldg., 260 Godwin Ave., Wyckoff, N. J.
Garden State Parkway Div., Route 34, Matawan, N. J.

JOHN J. HARTE CO.
Engineers—Architects
Water—Sewer—Gas—Paving
Airports—Electric Distribution
Drainage—Structural—Site Planning
Atlanta, Ga. New York, N. Y.

Fridy - Gauker - Truscott & Fridy
Architects & Engineers
Water . Sewerage . Industrial Waste Incineration . Power & Distribution Airport . Building . Town Planing
1321 Arch Street . Philadelphia 7, Pa.

WHAT IS YOUR WATER PROBLEM?
Write, Wire or Phone:
Geo-Research
Consultants: Geology — Geophysics — Mineralogy
Syracuse 10, N. Y., Phone: 4-6454
A DIVISION OF SYRACUSE UNIVERSITY RESEARCH INSTITUTE

F. R. FRIEDEWALD
Consulting Engineer
Waterworks - Sewage - Gas Supply and Distribution - Drainage - Streets Improvements - Estimates Reports - Surveys
311 South First St., Belleville, Ill.
Phone: Belleville 3225

JOHN J. GOKEY ASSOCIATES
Municipal Appraisers
Appraising Real Estate since 1934
Former Chief Assessor Town of Irondequoit, N. Y.
2370 Elmwood Avenue Rochester 18, N. Y.

EMERY C. FURRER
City Planning, Municipal and Sanitary Engineering, Building Codes and Zoning Ordinances, Airports, Drainage, Flood Control, Industrial Plants, Design of Fixed and Movable Bridges.
64 W. Randolph St. Chicago 1, Ill.

HOWARD R. GREEN COMPANY *40th Year*
Consulting Engineers
Municipal and Industrial Water Supply and Treatment; Sewerage and Disposal
Airports, Paving, Bridges, Industrial Structures
BEVER BUILDING, CEDAR RAPIDS, IOWA

GEORGE A. GIESEKE
Consulting Engineers
Municipal Engineering Problems
Surveying, Housing Development
Water Supply, Industrial Wastes
Sewerage, Refuse Incineration
Design
Supervision of Construction
1405 W. Erie Ave., Phila 40, Pa.

GRIFFENHAGEN & ASSOCIATES
Consultants in Public Administration and Finance
Counsel and technical assistance on organization, procedure, personnel, physical facilities, finance, policies, and plans.
Washington Milwaukee Boston Los Angeles Chicago New York

GILBERT ASSOCIATES, INC.
Engineers and Consultants
Water Supply and Purification
Sewage Treatment and Industrial Waste, Chemical Laboratory Service
New York—Reading, Pa.—Washington—Philadelphia—Houston

L. B. GRIFFITH
Consulting Engineer
Research, Reports and Designs on
Sewage and Industrial Waste Treatment.
22 S. EDISON STREET ARLINGTON 4, VA.

GLACE AND GLACE
Consulting Sanitary Engineers
Sewerage, Sewage and Industrial Wastes Treatment
Design, Construction and Supervision of Operation
Laboratory Service
Front at Boas St., Harrisburg, Pa.

GUNITE CONCRETE & CONSTRUCTION COMPANY
Engineers—Cement Gun Specialists—Contractors
LININGS — ENCASING — INSULATING — REPAIRING
FIREPROOFING — RENOVATING — NEW CONSTRUCTION
1301 Woodswether Rd., Kansas City 5, Mo.
2016 West Walnut St., Chicago 12, Ill.
2036 Addison, Houston 25, Texas
St. Louis — Minneapolis — Denver — New Orleans

GREELEY & HANSEN
Engineers
Water Supply, Water Purification
Sewerage, Sewage Treatment
Flood Control, Drainage, Refuse Disposal
220 S. State Street, Chicago 4

HAPMAN-DUTTON COMPANY
Engineers
CONSULTATION, DESIGN and INSTALLATION
of Garbage Cooking Units for Hog Feeding, to meet State Laws
Write — Wire — Phone
630-A Gibson St. Phone 3-1675 Kalamazoo, Michigan

The Consulting Engineers' section of THE MUNICIPAL INDEX for 1954 will be found on pages 70 to 87

FREDERIC R. HARRIS, INC. *Consulting Engineers*
Frederick H. Dechant — Edward J. Quirin — Eugene H. Harlow
MUNICIPAL AND INDUSTRIAL DEVELOPMENTS
Water Supply, Airports, Sewage and Waste Disposal, Highways, Bridges, Incinerators, Flood Control
PORT AND HARBOR WORKS
Investigations, Designs, Appraisals
123 So. Broad Street, Philadelphia 9, Pa.
27 William Street, New York 5, N. Y.
Ferry Building, San Francisco 11, Cal.

HASKINS, RIDDLE & SHARP
Consulting Engineers
Civil—Sanitary—Hydraulic
Charles A. Haskins
P. Clifford Sharp
Wm. G. Riddle
Finance Bldg. Kansas City 6, Mo.

ROBERT BRUCE HARRIS
Landscape & Golf Course Architect
GOLF COURSES • PARKS • SCHOOL GROUNDS • INSTITUTIONS • SITE PLANNING
664 N. MICHIGAN AVENUE · CHICAGO 11 · ILLINOIS

The American City Professional Service Directory

HAVENS AND EMERSON
W. L. Havens C. A. Emerson
A. A. Burger F. C. Tolles F. W. Jones
W. L. Leach H. H. Moseley J. W. Avery
F. S. Palocsay E. S. Ordway
Consulting Engineers
Water, Sewerage, Garbage, Industrial Wastes, Valuations—Laboratories
Leader Bldg. Cleveland 14, O. Woolworth Bldg. New York 7, N. Y.

HAZEN AND SAWYER
Engineers
Richard Hazen Alfred W. Sawyer
Municipal and Industrial Water Supply Purification and Distribution
Sewage Works and Waste Disposal Investigations, Design.
Supervision of Construction and Operation
110 East 42nd St. New York 17, N. Y.

HENNINGSON, DURHAM & RICHARDSON
Consulting Engineers since 1917 for more than 700 cities and towns.
Water Works, Light and Power, Sewers, Sewage Treatment, Reports, Flood Control, Appraisals, Drainage, Rural Electrification.
2962 Harney St., Omaha 2, Nebraska

HILL and HILL
Engineers
Sewage and Waste Disposal, Water Supply and Filtration, Dams, Reservoirs, Tunnels, Airport and Topographic Surveys
Home Office: 8 Gibson Street North East, Pa.

CHAUNCEY A. HYATT
Consultant Specialist on Swimming Pools Exclusively
Design — Operation — Maintenance — Renovation of existing pools.
Plans checked — Reports — Surveys.
"35 Years of Experience Covering Thousands of Pools" 5555 Sheridan Rd., Chicago 40, Ill.

Established 1914
CITY, COUNTY & REGIONAL PLANS & ZONING STUDIES
JOHN LEON HOFFMAN, Inc.
Atlanta, Georgia
519 Forsyth Building
Forsyth, Georgia
200 W. Adams Street

J. L. JACOBS & COMPANY
Public Administration Consultants and Engineers Since 1915
Property Appraisals and Tax Equalization—Finance—Organization—Procedures—Fringe Area Problems—Facilities—Personnel Classification and Pay Plans
53 W. JACKSON BLVD., CHICAGO 4, ILLINOIS
Other Offices; Boston, Los Angeles, Washington, D. C.

WILLIAM T. HOOPER, JR.
Consulting Engineers
Water Supply, Sewerage and Sewage Treatment; Municipal, Industrial and Structual Design; Reports, Supervision and Laboratory Service.
804 Belvidere St., Waukegan, Ill.

ENGINEERING OFFICE OF CLYDE C. KENNEDY
COMPLETE MUNICIPAL ENGINEERING SERVICE
- WATER SUPPLY
- SEWAGE AND WASTE TREATMENT
- SEWAGE RECLAMATION

CHEMICAL AND BIOLOGICAL LABORATORY
604 Mission Street San Francisco 5

CITY DEPARTMENTS
can depend upon this Professional Service Directory as a thoroughly reliable "Who's Who" among Consulting Engineers Specializing in Municipal Work.

L. E. LOWRY
Consultant
Fire Alarm Systems — Police Signaling Systems
Surveys — Reports — Recommendations — Plans — Specifications
1235 Ridge Avenue Evanston, Illinois

HORNER & SHIFRIN
Consulting Engineer
W. W. Horner H. Shifrin
V. C. Lischer E. E. Bloss
Airports—Hydraulic Engineering Sewerage—Sewage Treatment Water Supply — Municipal Engineering—Reports.
Shell Building, St. Louis 3, Mo.

METCALF & EDDY
Engineers
Water, Sewage, Drainage, Refuse and Industrial Wastes Problems
Air Fields, Laboratory, Valuations
Statler Building, Boston 16, Mass.

Harold Hoskins & Associates
(Successors to Scott & Scott, Inc.)
Consulting Engineers
Sewers and Sewage Treatment Paving Water Supply Drainage Bridges Airports Reports Power Plants Surveys
231 N. 11th St., Lincoln 8, Nebr.
720½ 9th St., Greeley, Colorado

JOHN M. MUDDEMAN & ASSOCIATES
Planning Consultants
STONY BROOK AND SEAFORD, LONG ISLAND, N. Y.
Comprehensive Municipal Planning Programs—Subdivisions—Zoning—Traffic—Master Plans—Airports—Building Codes and General Consulting Service
Tax Maps and Revaluation Surveys—Complete Reports for Capital Budgets and Municipal Finance

ROBERT W. HUNT CO.
Engineers
Inspection—Tests—Consultation Pipe and Appurtenances; Paving and Engineering Materials; Green and Treated Lumber
175 W. Jackson Blvd., Chicago 4 and all large industrial centers.

NUSSBAUMER - CLARKE and VELZY, INC.
CONSULTING ENGINEERS
SEWAGE TREATMENT — WATER SUPPLY — INCINERATION
DRAINAGE — TOWN PLANNING — APPRAISALS
327 Franklin St., Buffalo 2, N. Y. 52 Vanderbilt Ave., New York 17, N. Y.

Jenkins, Merchant & Nankivil
Consulting Engineers
Municipal Improvements Sewerage
Power Development Water Systems
Traffic Surveys Industrial Plants
Flood Control Recreational Facilities
Airports Investigations and Reports
805 East Miller St. Springfield, Ill.

THE H. C. NUTTING COMPANY
Inspecting and Testing Engineers
Water Waste Survey Trunk Main Surveys Water Distribution Studies
Chemical and Physical Testing of Paving and Building Materials—Metals—Pipe Oils, Etc.
4120 Airport Road Cincinnati 26, Ohio

THE JENNINGS-LAWRENCE CO.
Civil & Municipal Engineers
Water Supply—Treatment—Distribution
Sewerage—Sewage Treatment—Paving
Drainage—Dams Surveys—Mapping
Reports Plans—Supervision
1392 King Ave. Columbus 12, Ohio

JONES, HENRY & WILLIAMS
Formerly Jones, Henry & Schoenmaker
Consulting Sanitary Engineers
Water Works
Sewerage and Treatment
Waste Disposal
Security Bldg. Toledo 4, Ohio

Lublin, McGaughy & Assoc.
Architects and Consulting Engineers
Water supply, sewage disposal, airports, streets, improvements, municipal planning, buildings, recreational facilities, reports and appraisals.
21st at Llewellyn Ave., Norfolk 10, Va.
1001 Connecticut Ave., Washington, D. C.

J. B. McCrary Company, Inc.
Contractors & Engineers
Municipal Improvements
Water Works, Sewers,
Sewage Disposal
1408 Atlanta Federal Savings Bldg.
Atlanta, Georgia

McDONALD, HOOPER & DeJARNETTE
Consulting Engineers
Surveys • Mapping • Stadiums
Streets • Sewage • Drainage
Water • Roads
Design and Supervision
Andalusia, Alabama

KAISER ENGINEERS
Div. of Henry J. Kaiser Co.
General Engineering Services
Public Works
1924 Broadway, Oakland 12, Cal.
Phone: Twin Oaks 3-4600

PALMER AND BAKER, INC.
CONSULTING ENGINEERS—ARCHITECTS—NAVAL ARCHITECTS—MARINE ENGINEERS
Surveys — Reports — Design — Supervision — Consultation
Transportation and Traffic Problems: Tunnels, Bridges, Highways, Airports; Industrial Buildings; Waterfront and Harbor Structures; Graving and Floating Dry Docks; Vessels, Boats and Floating Equipment. Complete Soils, Materials and Chemical Laboratories
Mobile, Ala. New Orleans, La. Washington, D. C. Houston, Texas

JOHN J. KASSNER & CO.
Consulting Engineers
John J. Kassner David Levine
Preliminary Studies, Designs, Contracts, Specifications, Highways, Expressways, Structures, Drainage, Sewerage, Waterfront, Site Planning, Housing, Parking, Parks.
111 Broadway New York 6, N. Y.

PARSONS, BRINCKERHOFF, HALL & MACDONALD
Engineers
Airports, Bridges, Tunnels, Highways, Traffic & Transportation Reports, Subways, Foundations, Harbor Works, Valuations, Industrial Buildings, Power Development, Dams, Sewerage, Water Supply.
51 Broadway, New York 6, N. Y.

KEIS & HOLROYD
Consulting Engineers
Formerly Solomon & Keis
Since 1906
Water Supply and Purification, Sewerage and Sewage Treatment, Garbage and Refuse Disposal and Incineration, Industrial Buildings
Troy, N. Y. Ft. Lauderdale, Fla.

THE PITOMETER ASSOCIATES, INC.
Engineers
Water Waste Surveys Trunk Main Surveys Water Distribution Studies
Water Measurement and Special Hydraulic Investigations
50 Church Street New York 7, N. Y.

A. C. KIRKWOOD AND ASSOCIATES
Engineers — Consultants
Wirthman Bldg.
Kansas City 3, Mo.

PITTSBURGH TESTING LABORATORY
INSPECTING ENGINEERS AND CHEMISTS
PITTSBURGH, PA.
Branch Offices in Principal Cities

KNAPPEN-TIPPETTS-ABBETT-McCARTHY ENGINEERING CO.
Ports, Harbors, Flood Control, Irrigation, Power, Dams, Bridges, Tunnels, Highways, Subways, Airports, Traffic, Foundations, Water Supply, Sewerage, Reports, Design, Supervision, Consultation.
62 West 47th St., New York City

CLYDE POTTS ASSOCIATES
Weston Gavett Stanley N. Williams
Sewerage and Sewage Disposal — Water Works and Water Supply
Valuations and Appraisals
30 CHURCH STREET NEW YORK 7, N. Y.

MORRIS KNOWLES Inc
Engineers
Water Supply and Purification, Sewerage and Sewage Disposal Valuations, Laboratory, City Planning.
1312 Park Bldg.
Pittsburgh 22, Pa.

RADER ENGINEERING CO.
Airports, Bridges, Roads and Streets, Port Developments, Water Works, Drainage, Sewerage, Sewage Disposal, Transportation, Traffic and Parking Studies
Consultants — Investigations — Reports — Valuations — Designs — Specifications
Supervision of Construction
111 N.E. 2nd Ave. Miami 32, Florida
1025 Connecticut Ave. Washington, D. C.

LOUIS J. KROGER AND ASSOCIATES
Administrative Surveys—Personnel Classification—Salary Plans—Civil Service Testing
25 California Street
San Francisco
204 Rowan Bldg., Los Angeles
453 Morgan Bldg., Portland

RAYNOR AERIAL SURVEYS
• Topographic Maps
• Aerial Photography
• Photogrammetric Surveys
GEORGETOWN, CONNECTICUT
Tax Maps •
Surveys •
Controlled Mosaics •

HAROLD M. LEWIS
Consulting Engineer, City Planner
Municipal & Regional Planning
Analyses of urban problems, zoning, master plans, traffic, parking, subdivisions, redevelopment.
Reports—Plans—Ordinances
15 Park Row New York 38, N. Y.

REVERE ENGINEERING CO.
De Soto B. McCabe, Jr. *Consulting Engineers* John D. Hooper
Water Sources and Supply, Sewerage and Sewage Treatment.
Planning and Programming, Conservation of Resources.
Reports and Appraisals, Buildings and Bridges, Highways and Airports.
Municipal Improvements, Industrial Management, Advisors to Management.
8340 West Grand Ave. Phone 3-1030 River Grove (Chicago Suburb), Illinois

WM. S. LOZIER CO.
Consulting Engineers
Sewerage, Sewage Disposal, Water Supply, Water Purification, Refuse Disposal
10 Gibbs St., Rochester 4, N. Y.

ROBERT AND COMPANY ASSOCIATES
Architects and Engineers
ATLANTA, GEORGIA
Water Supply
Sewage Disposal
Industrial Wastes
Incinerators
Power Plants
Valuations

The American City Professional Service Directory

THE JOHN McGRADY CO.
Civil and Municipal Engineers
Charleston, S. C.

GEORGE B. MEBUS
Consulting Engineers
Water Supply Sewage Treatment
Industrial Waste Treatment
Northwestern Natl. Bank Bldg., Glenside, Pa.

STUART M. MERTZ
Landscape Architect
Planning Consultant
Park and Recreation Areas, Schools Hospital and Institution Grounds Commercial Centers, Subdivisions Cemeteries, Housing, City Plans, etc.
7906 Benhomme, St. Louis 5, Mo.

Metropolitan Planners, Inc.
Planning Consultants
Lawrence V. Sheridan
Kenneth L. Schellie
City and County Planning - Zoning - Subdivision and Shopping Center Design - Urban Redevelopment - Airport Zoning - Industrial District Plans - Landscape Architecture
809 Bd. of Trade Bldg., Indianapolis 4, Ind.

RUSSELL and AXON
Consulting Engineers
Civil—Sanitary—Structural—Industrial—Electrical—Rate Investigations
408 Olive Street, St. Louis 2, Mo.
Municipal Airport, Daytona Beach, Fla.

LEONARD MISCALL AND ASSOCIATES
Consultants
Municipal Problems, Planning and Zoning Studies and Reports
111 Parker Pl. Ithaca, New York

IRBY SEAY COMPANY
CONSULTING ENGINEERS
WATER SUPPLY & TREATMENT
DISTRIBUTION
SEWAGE SYSTEMS & TREATMENT
USE SURVEYS & EVALUATION
Goodwyn Institute Bldg., MEMPHIS 3, TENNESSEE Telephone—8-2733

B. L. Oliver & Company
Municipal Consulting Engineers
Water System, Electric Plants, Distribution, Disposal Plants, Sewerage, Paving and Drainage, Gas Systems, Utility Reports, Rates and Appraisals.
Grand Avenue Bank Bldg.
Kansas City 8, Missouri

SEELYE STEVENSON VALUE & KNECHT
Consulting Engineers
Airports, Highways, Dams, Concrete, Steel, Welding, Foundations, Stadia, Appraisals and Industrial Plants
101 Park Avenue, New York 17, N. Y.

Pan American Consultants
Engineers
River & Harbor Development—Hydro-electric Power—Dams—Ports—Flood Control—Irrigation—Reclamation—Airports—Water Supply—Sewage & Industrial Waste Treatment—Reports—Consultation—Design
Midland Building
176 West Adams St., Chicago 3

SERVIS, VAN DOREN & HAZARD
Engineers
STRUCTURES, BUILDINGS, FOUNDATIONS, SEWERAGE, WATER SUPPLY, STREETS, HIGHWAYS, AIRPORTS, FLOOD CONTROL, DRAINAGE, POWER PLANTS, ELECTRICAL DISTRIBUTION.
2015 Gage Boulevard, Phone 4-6603, Topeka, Kansas

PATZIG TESTING LABORATORIES
Inspection Service
Chemical and Physical Testing of Paving and Building Materials, Metals, Fuels, Oils, Water, etc.
2215 Ingersoll Ave., Des Moines, Ia.

SMITH AND GILLESPIE
Consulting Engineers
JACKSONVILLE, FLORIDA
An Organization of Experienced Engineers Specializing in Municipal Utilities and Public Works

BOYD E. PHELPS, INC.
Architects and Engineers
Water Supply and Purification
Sewerage and Sewage Treatment
Power Plants, Buildings, Investigations
Reports, Appraisals, Rate Studies
1000 Washington St., Michigan City, Ind.

SNYDER, McLELLAN and WATSON
Financial and Engineering Counsellors
Studies-Reports, Public Relations
Bond Promotion, Surveys
Design, Engineering
WATER SEWERAGE
Hillsboro, Indiana

CHANGED YOUR ADDRESS?
If so, please notify the publishers as we are anxious to have your card correct in this Directory. Thank you.

SOIL TESTING SERVICES, INC.
Foundation Borings, Rock Coring
Field and Laboratory Engineering Tests of Soils
Soil and Foundation Reports, Inspection
1105 E. James St., Portland, Michigan
1844 N. 35th Street, Milwaukee, Wisconsin
3529 N. Cicero Ave., Chicago 41, Illinois

Malcolm Pirnie Engineers
Civil and Sanitary Engineers
Malcolm Pirnie, Ernest W. Whitlock
Robert D. Mitchell, Carl A. Arenander
Malcolm Pirnie, Jr.
Investigations, Reports, Plans
Supervision of Construction and Operations
Appraisals and Rates
25 W. 43rd St., New York 36, N. Y.

CONSULTING ENGINEERS
not already represented in this directory can secure rates for these cards and further particulars of our service by writing to—
Advertising Department
THE AMERICAN CITY
470 Fourth Avenue, New York 16, N. Y

POLK, POWELL & HENDON
Engineers—Consultants
A. O. Polk, Harry H. Henden
Hugh A. Powell
Water systems, sewers, sewage treatment plants, steam and hydro plants, dams, drainage, industrial, buildings, municipal planning reports, plans, estimates, supervision.
620 Stallings Bldg., Birmingham 3, Ala.

The American City Professional Service Directory

ALEXANDER POTTER ASSOCIATES
Consulting Engineers
Water Works, Sewerage, Industrial Wastes, Hydraulic Works, Reports, Designs, Appraisals.
50 Church Street, New York 7, N. Y.

STANLEY ENGINEERING CO.
Consulting Engineers
Airports—Drainage—Electric Power
Flood Control—Rate Studies
Sewerage—Valuations—Water Works
Hershey Bldg. Muscatine, Iowa

HENRY B. STEEG & ASSOCIATES
Engineers
Sewage Treatment, Water Supply
Garbage and Refuse Disposal
2331 N. Meridian Street
P. O. Box 5052, Station A
Indianapolis 8, Ind.

OFFICE of A. CARL STELLING
Consulting Landscape Architects and Site Planners
Communities, Subdivisions, Housing Projects, Parks and Recreation Areas, Schools and Universities, etc.
127 East 39th St., New York 16, N. Y.

PRELOAD ENGINEERS INC.
Founded—1934
Consultants in Prestressed Design
Designers of more than 800 prestressed concrete bridges, buildings, tanks and high pressure pipe lines erected in North America since 1934.
955 North Monroe Street, Arlington, Va.

D. B. STEINMAN
Consulting Engineer
Bridges
Design, Construction, Strengthening, Investigations, Reports, Advisory Service
117 Liberty Street New York 6, N. Y.

JOHN G. REUTTER
Professional Engineer
Municipal, Industrial Water Supply and Treatment
Sewage and Waste Disposal
Housing Development, Plot Plans
Land Surveys
708 Federal St. Camden 3, N. J.
WOodlawn 4-1820

ROBERT H. STELLWAGEN
Consulting Engineer
Municipal and Industrial Waste Problems
Collection, Incineration, Salvage, Pumping, Treatment, Testing
629 Buhl Bldg. Detroit 26, Mich.

LADISLAS SEGOE & ASSOC.
City Planners—Consulting Engineers
Comprehensive City Plans ● Zoning Plans, Ordinances and Expert Testimony ● Traffic, Transit, Transportation Studies ● Housing Surveys ● Urban Redevelopment & Housing Projects.
817 Provident Bank Bldg., Cincinnati 2

THE STERLING COMPANY
Engineers — Surveyors
Civil — Sanitary — Sewerage Disposal — Structural — Aerophotography
10700 St. Charles Rd., St. Ann 14, Missouri

I. S. SHATTUCK
City Plans—Land Use, Zoning, Industrial, Residential and other Urban Developments, Subdivision Design,
Traffic and Parking Plans.
P. O. Box 312 Wayzata, Minn.

ALDEN E. STILSON & ASSOCIATES, LIMITED
Consulting Engineers
Water Supply—Sewerage—Waste Disposal—Bridges
Highways—Industrial Buildings—Studies—Surveys—Reports
209 SOUTH HIGH STREET COLUMBUS, OHIO

"WHO'S WHO"
City Departments can depend upon this Directory as a thoroughly reliable "Who's Who Among Consulting Engineers Specializing in Municipal Work."

PHILIP B. STREANDER AND AFFILIATES
Consulting Sanitary Engineers
Water Supply, Treatment, Distribution, Sewer Systems, Sewage Treatments, Plans, Supervision, Reports.
132 Nassau Street, New York 7, N. Y.
183 Essex Street, Boston 11, Mass.

GEORGE W. SIMONS, JR. AND ASSOCIATES
Planning Consultants and Municipal Engineers
City, County Plans—Zoning—Redevelopment and Housing—Traffic and Parking Studies — Parks — Recreation — Subdivisions—Landscaping.
402 Hildebrandt Bldg., Jacksonville 2, Florida

TOLEDO TESTING LABORATORY
Inspection and Testing of Paving and Engineering Materials
Sub-Surface Exploration and Soil Tests
1810 North 12th Street Toledo 2, Ohio

SINGSTAD & BAILLIE
Consulting Engineers
Ole Singstad David G. Baillie, Jr.
Tunnels, Subways, Highways, Foundations, Parking Garages
Investigations, Reports, Design Specifications, Supervision.
34 State St. New York 4, N. Y.

WAINWRIGHT & RAMSEY Inc.
Consultants on Municipal Finance
70 Pine Street New York 5, N. Y.

J. E. SIRRINE COMPANY
Engineers
Water Supply & Purification
Sewage & Industrial Waste Disposal, Stream Pollution Reports,
Utilities, Analyses
Greenville South Carolina

ARE YOU A CITY OFFICIAL?
You will find this Directory a reliable "WHO'S WHO" of consulting engineers who specialize in municipal work.

The American City Professional Service Directory

HENRY W. TAYLOR
Consulting Engineers
Water Supply, Sewerage
Refuse Disposal, Incineration
Industrial Developments
151 West Merrick Road,
Freeport, N. Y.

TOWN PLANNING
IN ALL ITS PHASES
TECHNICAL PLANNING ASSOCIATES, Inc.
New Haven 10 Conn

FRED W. TUEMMLER
AND ASSOCIATES
Community Planning and Development Consultants
Comprehensive plans, zoning, subdivision regulations; shopping centers; industrial plant location, market analyses; subdivisions, parks, schools.
Telephone— Union 4-5500
Professional Building
Hyattsville, Maryland

UHLMANN & ASSOCIATES
Paul A. Uhlmann H. E. Bonhan
Carl E. Kuck Nye Grant
Consulting Engineers
Sewage and Industrial Waste Treatment
Water Supply and Purification
1441 N. High St. Columbus 1, O.

J. STEPHEN WATKINS
J. S. WATKINS G. R. WATKINS
CONSULTING ENGINEERS
Municipal and Industrial Engineering, Water Supply and Purification, Sewerage and Sewage Treatment, Highways and Structures, Reports, Investigations and Rate Structures.
Main Office:
251 East High Street
Lexington, Kentucky
Branch Office:
901 Hoffman Building
Louisville, Kentucky

YOUR CARD
could be set in this space at reasonable cost
If you are interested, write
THE AMERICAN CITY
470 Fourth Ave., New York 16,
or 1719 Daily News Building
Chicago 6, Ill.

ROY WENZLICK & CO.
SURVEYS: Economic, Planning, Housing, Parking, Zoning
APPRAISALS and REVALUATIONS for tax equalization
706 Chestnut Street, St. Louis 1, Mo.—Phone: GArfield 0707

WILLIAM J. WENZEL
Consulting Engineer
Developing the Great Northwest
Great Falls Montana

WESTON, ECKENFELDER and HOOD, INC.
Consultants
Engineers—Biologists—Chemists
Stream Pollution, Industrial Waste Disposal, Waste Utilization, Water Supply, Toxicity Evaluations, Laboratory Analyses, Surveys, Reports, Research and Development, Process Engineering, Plans and Specifications, Operation Control
45 North Broad Street Ridgewood, New Jersey

WESTON & SAMPSON
Consulting Engineers
Hydraulic and Public Health Engineering—Engineering and Laboratory Investigations.
Supervision of Purification Plants
14 Beacon St. Boston, Mass.

WIGHT AND COMPANY
Consulting Engineers
Airfields — Pavements — Sewerage -- Surveys — Reports — Municipal Improvements
Downers Grove, Ill.

WHITMAN & HOWARD, Inc.
Engineers — Consultants
Municipal Planning, Water Supply, Drainage, Sewerage, Industrial and Municipal Waste Treatment
89 Broad St. Boston, Mass.

E. T. WILKINS & ASSOCIATES
APPRAISERS ENGINEERS
Municipal and County Tax Reappraisals
Tax Maps Plat Books Aerial Surveys
235 LEADER BLDG., CLEVELAND, OHIO 404 SHARP BLDG., LINCOLN, NEBR.

WHITMAN, REQUARDT and Associates
Engineers — Consultants
Civil—Sanitary—Structural
Mechanical Electrical
Reports, Plans, Supervision, Appraisals
1304 St. Paul St., Baltimore 2, Md.

A. W. WILLIAMS INSPECTION COMPANY
MOBILE, ALABAMA
Established 1921
Inspections — Tests — Analyses — Sampling
Sub-surface Exploration
Representatives throughout U. S. A. Member A. C. C. I.

WIEDEMAN & SINGLETON
Consulting Engineers
Water Works, Sewers, Sewage Disposal, Appraisals, Valuations, Reports
1303 C. & S. Bank Bldg.,
Atlanta Ga.

WOOD, DOLSON COMPANY, INC.
Wood, Dolson Building New York 23, N. Y.
Tax Equalization Appraisals for Government
56 years of experience and background. A staff of 65 experts in every phase of real and personal property
For highly professional equalization of local taxes, call us collect. ENdicott 2-8900, New York City

WILEY & WILSON
Consulting Engineers
Municipal Planning, Water Supply Sewerage, Sewage and Waste Treatment, Incinerators, Streets and Pavements, Airports, Light and Power Plants. Reports—Plans—Supervision.
905 Peoples Bank Bldg., Lynchburg, Va.
711 West Main St., Richmond 20, Va.

CONSULTING ENGINEERS
not already represented in this directory can secure rates for these cards and further particulars of our service by writing to—
Advertising Department
THE AMERICAN CITY
470 FOURTH AVENUE NEW YORK 16, N. Y.

ZONING CONSULTANTS
Experienced
Advisory Expert Testimony Counsel
Stony Brook, Seaford and New York
Robert C. Richter John M. Muddeman
Main Offices: Phone:
P. O. Building Stony Brook
Stony Brook, New York 7-0252

Index to Advertisers

Abrams Aerial Survey Corp. 235
Jepson-Murray Advertising
Adams Mfg. Co., J. D. 24
Caldwell, Larkin & Co., Inc.
Adams & Westlake Co. 132
Henri, Hurst & McDonald, Inc.
Aero Service Corp. 14
Aitkin-Kynett Co.
Allis-Chalmers Tractor Div. ..60, 61, 68
Bert S. Gittins, Advertising
Aluminum Co. of America 146, 147
Fuller & Smith & Ross Inc.
American Appraisal Co. 235
Buchen Co.
American Bitumuls and Asphalt Co. 52
Wank & O'Rourke
American Concrete Corp. 156
Griswold-Eshleman Co.
American Concrete Pressure Pipe Association 194
Frank C. Nahser, Inc.
American-LaFrance-Foamite Corp. .. 41
Mellor Advertising Agency, Inc.
American Photocopy Equipment Co. 64
Irving J. Rosenbloom Adv. Agency
American Pipe and Construction Co. 234
Willard G. Gregory & Co.
American Playground Device Co. .. 207
Pettinger-Harding, Inc.
Ammann, Photogrammetric Engineers, Jack 235
Claude Aniol & Assoc.
Amplex Corp. 230
Beatty & Oliver, Inc.
Armco Drainage & Metal Products, Inc. 66
N. W. Ayer & Son, Inc.
Austin-Western Co. 162
Merrill, McEnroe & Associates, Inc.
Automatic Signal Div., Eastern Industries, Inc. 155
Remsen Advertising Agency, Inc.
Automatic Voting Machine Corp., 40

Badger Meter Mfg. Co. 176
Klau-Van Pietersom-Dunlap, Inc.
B & B Engineering Corp. 235
Barber-Greene Co. 81
Buchen Co.
Bean Mfg. Co., John 76
Jaqua Co.
Bell Telephone System 4
N. W. Ayer & Son, Inc.
Bigelow, Kent, Willard & Co. 235
Black & Veatch 235
Blackburn-Smith Mfg. Co. 177
Boucher Associates, Henry M. 235
Braxmar Co., Inc., C. G. 195
Brown & Blauvelt 235
Brushmaster Saw Inc. 197
Chambers & Wiswell Inc.
Buck, Seifert & Jost 236
Bucyrus-Erie Co. 169
Bert S. Gittins, Advertising
Buffalo Meter Co. 26
Melvin F. Hall Adv. Agency Inc.
Buffalo Pipe and Foundry Corp. 219
Adam F. Eby, Adv.
Bulot, Inc., Francis H. 236
Burger Co., William E. 236
Burgess & Niple 236
Burke Co., J. E. 195
Fred J. Chlupp Assoc., Inc.
Burke, Inc., Ralph H. 236
Burns & McDonnell 236
Burroughs Corp. 77
Campbell-Ewald Co.

Cast Iron Pipe Research Assn., 84, 75
H. B. Humphrey, Alley & Richards, Inc.
Cataphote Corp. 191
A. Carl Eversole, Advertising
Caterpillar Tractor Co. ...34, 35, 246
N. W. Ayer & Son, Inc.
Centriline Corp. 161
Needham & Grohmann, Inc.
Champion Corp. 188
Critchfield & Co.
Chapman Valve Mfg. Co. 78
Sutherland-Abbott, Advertising
Chicago Bridge and Iron Co. 22
Russell T. Gray, Inc.
City Tank Corp. 58
Cleminshaw Co., J. M. 236
Clipper Mfg. Co. 69
Kaufman Advertising Co., Inc.
Clow & Sons, James B. 59
Henry M. Hempstead Co.
Cole & Son, Charles W. 236
Cole-Layer-Trumble Co. 211, 236
Cole Mfg. Co., R. C. 76
Burton E. Wyatt & Co.
Colorado Fuel & Iron Corp. 223
Doyle, Kitchen & McCormick, Inc.
Consoer, Townsend & Associates .. 236
Cotton, Pierce, Streander, Inc. 237
Crouse-Hinds Co. 144
Barlow Advertising Agency, Inc.
Cushman Motor Works 192
Ayres and Associates, Inc.
Cyclone Fence Div. 217
Batten, Barton, Durstine & Osborn, Inc.

Damon & Foster 237
Darley & Co., W. S. 195
Darling Valve & Mfg. Co. 168
Griswold-Eshleman Co.
De Laval Steam Turbine Co. 164
Michel-Cather, Inc.
De Leuw, Cather & Co. 237
Dempster Brothers, Inc. 210
Charles S. Kane Co.
Denominator Co., Inc. 202
Moresales Associates
Detectron Co. 206
Harry G. Willis & Assoc.
Dick Co., A. B. 201
Fuller & Smith & Ross Inc.
Dietz Co., R. E. 159
Lee-Stockman, Inc.
Dolge Co., C. B. 192
Caples Co.
Dual Parking Meter Co. 140
Griswold-Eshleman Co.
Duncan Parking Meter Corp. 16
Perry Hutchinson Co.

Eagle Signal Corp. 141
Boudinot Advertising
Eastman Chemical Products, Inc. ... 47
Kenyon & Eckhardt, Inc.
Eddy Valve Co. 215
Henry M. Hempstead Co.
Edwards, Kelcey & Beck 237
Electric-Aire Engineering Corp. ... 221
Schram Co.
Electrical Testing Laboratories, Inc. 237
Enterprise Engine and Machinery Co. 56
McCarty Co.
Etnyre & Co., E. D. 216
Howard H. Monk & Associates
Expanding Sewer Machine Co. ... 202

Fairbanks, Morse & Co. 51, 226
Buchen Co.
Fairchild Aerial Surveys, Inc. 237
Federal Sign & Signal Corp. 200
Edgar Walter Fischer & Assoc.
Ferro Enameling Co. 70
Ralph Cahn Advertising Agency
Fisher Research Laboratory, Inc. .. 211
Flexible Sales Corp. 108
Anderson-McConnell Adv. Agency
Flood & Co., Walter H. 237
Flynn & Emrich Co. 181
Harrison-Pitt, Inc.
Ford, Bacon & Davis 237
Fulton Bag & Cotton Mills 214
Herbert Rogers Co.

Gamewell Co. 20
Sutherland-Abbott, Advertising
Gannett Fleming Corddry & Carpenter, Inc. 237
Geerpres Wringer, Inc. 50
Denham & Co.
General American Transportation Corp. 79
Weiss & Geller, Inc.
General Electric Co. 130
G. M. Basford Co.
General Electric Co. 45
Maxon, Inc.
Geo-Research 238
Gerrard & Co., A. J. 160
Raymond C. Hudson & Assoc., Inc.
Giant Mfg. Co. 213
Gokey, John J. 238
Goldak Co. 80
Simons Co.
Golden-Anderson Valve Specialty Co. 232
Walker & Downing, Industrial Adv.
Grace Sign & Mfg. Co. 154
Whitehead & Sprague, Inc.
Gravely Tractors, Inc. 36
Albert D. Williams, Adv.
Green Co., Howard R. 238
Greenlee Tool Co. 175
Howard H. Monk & Assoc.
Griffenhagen & Assoc. 238
Griffith, L. B. 238
Gunite Concrete & Construction Co. 238
Walter L. Johnson Assoc.

Halsey, Stuart & Co., Inc. 187
Doremus & Co.
Hapman-Dutton Co. 238
Paxson Advertising, Inc.
Harley-Davidson Motor Co. 48, 49
Klau-Van Pietersom-Dunlap, Inc.
Harris-Barrier, Inc. 70
Harris, Inc., Frederic R. 238
Harris, Robert Bruce 238
Hersey Mfg. Co. 172
Hoffco, Inc. 226
Ruben Adv. Agency
Holan Corp., J. H. 62
Carpenter Adv. Co.
Hough Co., Frank G. 63
Ervin R. Abramson, Adv.
Hubbard Aluminum Products Co. .. 8
W. S. Hill Co.
Huber Mfg. Co. 190
Jay H. Maish Co.
Hussey Mfg. Co., Inc. 175
Ray Mills Adv. Agency, Inc.
Hyatt, Chauncey A. 239

Insto-Gas Corp. 220
Miller Adv. Agency
International Harvester Co. 196
Young & Rubicam, Inc.
International Salt Co., Inc. 57
Scheideler, Beck & Werner, Inc.

Jacobs & Co., J. L. 239
Jaeger Machine Co. 183
Mumm, Mullay & Nichols, Inc.
Johns-Manville 170
J. Walter Thompson Co.

The American City

Johnson Steel & Wire Co. 189
John W. Odlin Co., Inc.
Jones, Bethune 212
Joy Mfg. Co. 73
Walker & Downing, General Agency

Karpark Corp. 224
Smithson, Wyman & Withenbury, Inc.
Katolight Corp. 177
Frizzell Adv. Agency, Inc.
Keasbey & Mattison Co. 223
Geare-Marston
Kelly-Creswell Co. 10
Hugo Wagenseil & Assoc.
Kennedy, Clyde C. 239
Koehring Co. 65
Andrews Agency, Inc.
Kohler Co. 215
Roche, Williams & Cleary, Inc.
Koppers Co., Inc. 184
Batten,Barton, Durstine & Osborn, Inc.

Lake Shore Markers 212
Walter G. Forsythe, Adv.
Lakeside Engineering Corp. 202
Layne & Bowler, Inc. 6
Rosengarten & Steinke, Inc.
Leadite Co. 191
R. E. Lovekin Corp.
Lerch & Assoc., Charles W. 179
Brandt Adv. Co.
Le Roi Co. 42, 43
Hoffman & York, Inc.
Lowry, L. E. 239

Magee-Hale Park-O-Meter Co. ... 71
McCormick-Armstrong Co.
M & H Valve & Fittings Co. 193
Silver & Douce Co., Inc.
Manu-Mine Research & Development Co. 220
Marlow Pumps 38, 39
Richard LaFond Advertising Inc.
McCabe-Powers Auto Body Co. 12
Calvin & Co.
McWane Cast Iron Pipe Co. 209
Silver & Douce Co., Inc.
Metal Parts Machining Corp. 206
W. C. Hartman Adv. Agency
Metcalf & Eddy 239
Michie City Publications Co., Inc. 50
Mi-Co Meters 44
Jaap-Orr Co.
Mid-Western Industries, Inc...... 221
Associated Advertising Agency, Inc.
Millerbernd Mfg. Co. 128
Graves & Assoc.
Minnesota Mining and Mfg. Co... 139
Batten, Barton, Durstine & Osborn, Inc.
Miro-Flex Co. 80
Associated Adv. Agency, Inc.
Mobil-Sweeper Div. of The Conveyor Co. 46
Steller, Millar & Lester, Inc.
Morris Machine Works 218
Barlow Advertising Agency, Inc.
Muddeman & Assoc., John M. 239
Mueller Co. 54
Ross Advertising
Municipal Street Sign Co., Inc. ... 148
Martin L. Smith & Co., Inc.

National Clay Pipe Manufacturers, Inc. 180
Norman Malone Associates, Inc.
National Surety Corp. 70
Parker-Allston Assoc., Inc.
Neptune Meter Co. 82
W. L. Towne Advertising
New Hermes, Inc. 179
Lester Harrison, Inc.
Nichols Wire & Aluminum Co. 40
L. W. Ramsey Adv. Agency
Nite-Bright Sign Co. 214
Nordberg Mfg. Co. 174
Russell T. Gray, Inc.
Northern Gravel Co. 188
Sweet Advertising Agency
Nussbaumer-Clarke & Velzy, Inc... 239
Nutting Co., H. C. 239

O'Brien Mfg. Co. 206
Fred R. Rhode, Advertising
Oliver Corp. 199
Buchen Co.
Oliver Corp. (Iron Age Spreader) 30
Vansant, Dugdale & Co., Inc.
Onan & Sons, Inc., D. W. 229
Graves & Assoc.

Pacific Flush Tank Co. 126
Proebsting-Taylor, Inc.
Pacific States Cast Iron Pipe Co... 209
Silver & Douce Co., Inc.
Palmer & Baker, Inc. 240
Parsons, Brinckerhoff, Hall & Macdonald 240
Pippin Construction Equipment, Inc. 227
Gateway Adv. Agency
Pitometer Associates, Inc. 240
Pittsburgh-Des Moines Steel Co... 178
Walker & Downing, Industrial Adv.
Pittsburgh Testing Laboratory.... 240
Potts Assoc., Clyde 240
Prismo Safety Corp. 134
Michener & O'Connor, Inc.

Rader Engineering Co. 240
Ranney Method Water Supplies, ing 198
Cye Landy Adv. Agency, Inc.
Rayner Aerial Surveys..... 240
Recordak Corp. 181, 186
J. Walter Thompson Co.
Reflexite Corp. 175
Revere Engineering Co. 240
Rhodes, Inc., M. H. 247
Julian Gross Adv. Agency, Inc.
Robert & Co. Assoc. 240
Liller, Neal & Battle
Rockwell Mfg. Co. 67
Marsteller, Gebhardt & Reed, Inc.
Russell & Axon 241
Rust-Oleum Corp. 55
O'Grady-Andersen-Gray, Inc.
Ryerson & Son, Inc., Joseph T. 28
Calkins & Holden, Carlock, McClinton & Smith, Inc.

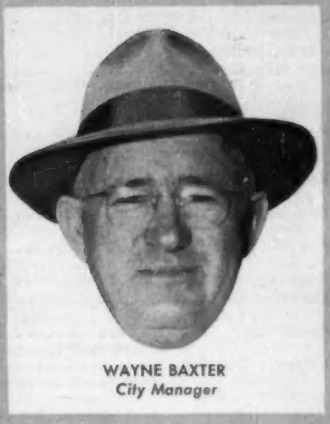
Schield Bantam Co. 166
Ambro Advertising Agency
Schramm, Inc. 231
Seay Co., Irby 241
Raymond Powell Agency
Seelye Stevenson Value & Knecht. 241
Servis & Van Doren 241
Shawnee Mfg. Co. 64
Carl Lawson Advertising Co.
Sherman Products, Inc. 208
Clark & Bobertz, Inc.
Sidu Co. 224
Skinner Co., M. B. 53
Jones & Taylor & Assoc.
Smith & Gillespie 241
Snyder, McLellan & Watson..... 241
Soil Testing Services, Inc. 241
Southern Signals, Inc. 18
Bozell & Jacobs Adv.
Sparkler Mfg. Co. 72
Kreicker & Meloan, Inc.
Standard Signs, Inc. 64
Kenneth H. Kolpien, Adv. Service
Standard Steel Works 203
James R. Reese Adv. Co.
Steinman, D. B. 242
Steilwagen, Robert H. 242
Sterling Co. 242
Stewart Iron Works Co., Inc. 50
Jaap-Orr Co.
Stilson & Assoc., Ltd., Alden E. ... 242
Streander & Affiliates, Philip B.... 242
Streeter-Amet Co. 76
Brandt Advertising Co.
Sweet Co., H. C. 206
Tech Adgency, Inc.

Tarrant Mfg. Co. 197
Tennessee Corp. 32, 191
Crawford & Porter, Inc.
Texas Co. 2
Thomas Drain Service 213
Jessop Advertising Co.
Time-O-Matic Co. 207
Todd Shipyards Corp. 198
Wendell P. Colton Co.
Toledo Testing Laboratory 242
Tower Iron Works 202
Potter-Repak Advertising
Tractor & Implement Div., Ford Motor Co. 157
Meldrum & Fewsmith, Inc.
Traffic House, Inc. 148
Pownall Agency
Traffic & Street Sign Co. 168
Duncan Brooks, Inc.
Traf-O-Teria System 150
McCormick-Armstrong Co.
Trojan Mfg. Co. 148
Ralph Dalton & Assoc.
Turbine Sewer Machine Co. 213

Underwood Corp. 204
Marschalk & Pratt Co., Inc.
Union Metal Mfg. Co. 142
Griswold-Eshleman Co.
United States Motors Corp. 214
Geer-Murray Co.
U. S. Pipe and Foundry Co. 37
H. B. Humphrey, Alley & Richards, Inc.
U. S. Steel Subsidiary..... 217
Batten, Barton, Durstine & Osborn, Inc.
Universal Mfg. & Sales Co. 189
Dan Ebberts Adv. Service

Wainwright & Ramsey, Inc. 242
Wald Industries, Inc. 135
Michener & O'Connor, Inc.
Wallace & Tiernan 248
Branstater Associates, Inc.
Ward's Trucksign Transfers 192
Watkins, J. Stephen..... 243
Wenzlick & Co., Roy 243
Western Railroad Supply Co. 136
L. H. Gross & Assoc.
Weston, Eckenfelder & Hood, Inc... 243
White Mfg. Co. 72
Juhl Advertising Agency
White Motor Co. 182
D'Arcy Advertising Co.
Wight & Co. 243
Wilkins & Assoc., E. T. 243
Williams Gauge Co. 183
Walker & Downing, Industrial Adv.
Williams Inspection Co., A. W. ... 243
Wilson Co., A. Reed 225
Wood Co., R. D. 205
Gray & Rogers, Advertising
Wood, Dolson Co., Inc. 243
Woodward Iron Co. 228
Sparrow Advertising Agency
Worthington-Gamon Div. 72
Worthington Mower Co. 152
Richard LaFond Adv. Inc.

"Paid for itself in 26 minutes, way we figure it"



WAYNE BAXTER
City Manager

CALVEN DAVIS
Superintendent of Utilities

Back in 1951, the city of Larned, Kansas, installed a Cat® D397 Electric Set as part of its light plant. It was put in primarily to power a boiler feed pump, a circulating pump, and a condensate pump--and secondarily, to serve as emergency standby for the light and water systems in the event of regular power failure.

Says City Manager Wayne Baxter: "We put our D397 in a weatherproof building separate from the main plant. Even if the main plant should be cycloned, our standby source is safe. We've only had to use the D397 in one emergency so far—for 26 minutes—but we figure it about paid for itself in that time."

A lot of other city and town governments are choosing reliable Caterpillar Electric Sets and Engines for similar use as both regular and standby power. They're ready to step in when you need them in emergency or they'll provide steady power for tens of thousands of hours with a minimum of maintenance. They operate with maximum efficiency on low-cost No. 2 furnace oil, for lower fuel bills. Simply designed, easy to operate, there's a Caterpillar unit tailored to your needs — 12 sizes up to 315 KW and 500 HP. Your nearby Caterpillar Dealer will be glad to help you find the one that's just right for your town. Why not call him today?

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

CATERPILLAR®

CUT COSTS WITH CAT POWER

mark-time manual parking meters

give

traffic control

plus . . .

quality construction

for longer life

quality performance

for increased revenue

Check these Mark-Time PLUS FEATURES!

Magic Safety Link protection guards against damage by carelessness or vandalism.

Safety-protection against snow, sleet, dirt, dust and other weather hazards.

Locked coin-box preventing revenue theft. The only proven method of safe, reliable, coin collection.

Completely water-proof timing unit assuring continuous meter operation.

Extra-visibility timing dials greatly simplifying enforcement problem.

Manual operation means greater simplicity of design and assures fool-proof, foul-proof performance.

Your city will keep on the PLUS side with a Mark-Time Manual "Hurricane" Parking Meter installation. Mark-Time Manual parking meters are designed to give continuous, dependable service free from costly maintenance . . . ready at all times in all weather to render efficient, uninterrupted traffic control.

MARK-TIME

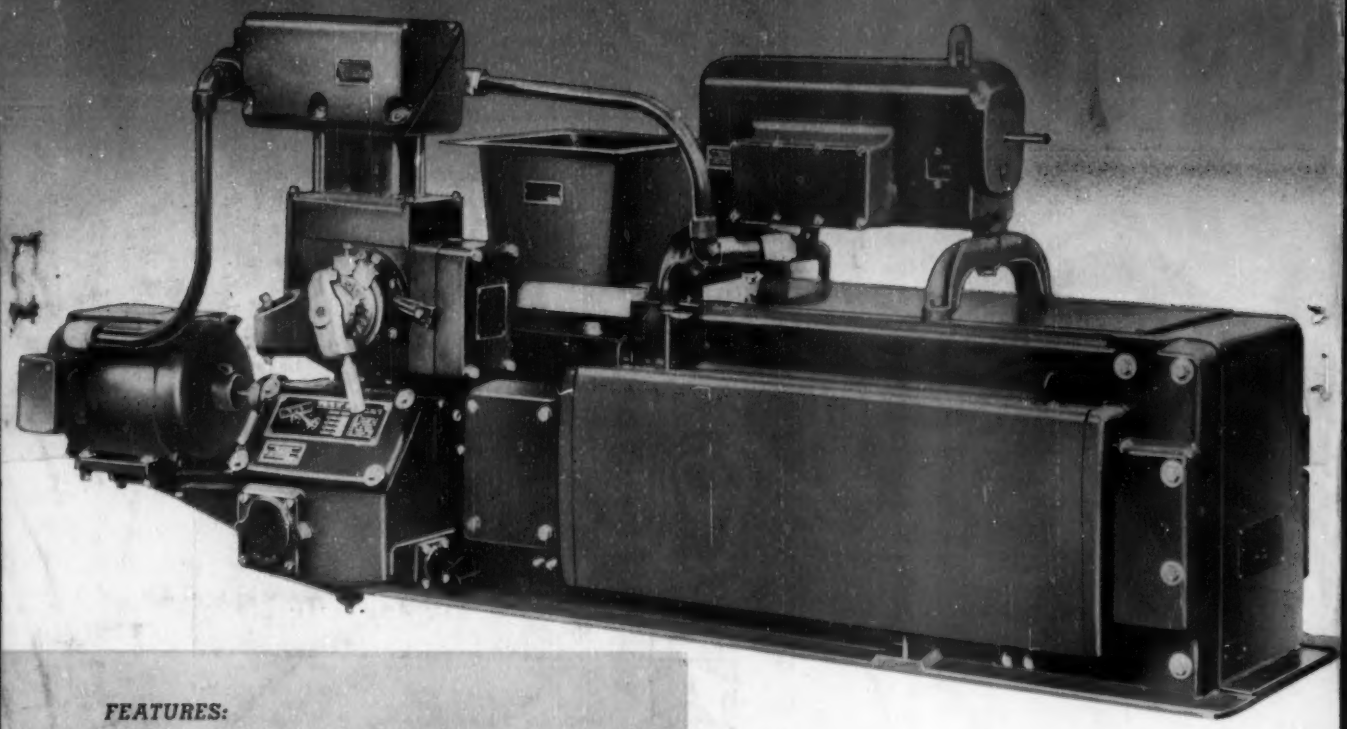
M. H. RHODES, INC.

HARTFORD, CONNECTICUT

Manufactured and sold in Canada by
Sperry Gyroscope Ottawa, Limited
3 Hamilton St., Ottawa, Ontario, Canada

The best "WEIGH"... is the MERCHEN way!

W&T Merchen Feeders give precision feeding of any waterworks chemical...*by weight.*



FEATURES:

–Continuous, minute-to-minute accuracy.

–Durable construction, sealed bearings and dust shields.

–Automatic built-in alarm switch.

–Knife edges and pivots tipped with special alloy for long life.

–Remote feed rate adjustment if desired.

–Adaptable to fully automatic proportional control.

Hundreds of installations feeding waterworks chemicals, industrial chemicals and feed and flour ingredients have proved the accuracy and dependability of these belt type gravimetric feeders.

USE W&T FEEDERS FOR
Dependable Chemical Control

WALLACE & TIERNAN

CHLORINE AND CHEMICAL CONTROL EQUIPMENT
NEWARK 1, NEW JERSEY—REPRESENTED IN PRINCIPAL CITIES